PROSPECTUS

MASTER OF SCIENCE DEGREE PROGRAM
IN
VISION REHABILITATION

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PROSPECTUS

MASTER OF SCIENCE DEGREE PROGRAM
IN
VISION REHABILITATION

Submitted To The
Pennsylvania Department of Education
March 4, 1983

Proposed Implementation Date
Fall, 1983

By The
Pennsylvania College of Optometry
1200 West Godfrey Avenue
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P384

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I. INTRODUCTION

Academic institutions are agents for and of social progress. Consequently, academic programs, whether they be of an educational, research or service nature, must be rooted in contemporary social values and needs. Today, the ability of institutions of higher education to fulfill this responsibility is severly challenged by significant shifts in societal circumstances: a changing student population, a knowledge and technology explosion, a dynamic although less traditional labor market, fluctuating governmental policy and support of higher education, emerging new patterns of university - industry relationships, the increasing cost of higher education and a world-wide recession. This dramatic set of conditions has precipitated both crisis and opportunity for the academic enterprise. While some colleges and universities are precariously poised between extinction and survival, others are demonstrating the creative leadership, academic vitality, and social responsiveness that are essential in a progressive society.

As a private, independent health professional institution, the Pennsylvania College of Optometry is acutely aware of the challenges it faces during the closing years of the twentieth century. It also recognizes that academic excellence requires an institution to go beyond itself, to explore and experiment, and to help mold the future. The proposed Master of Science Degree Program in Vision Rehabilitation in this institution's contribution to social progress. It has evolved from the unmet needs of the low vision/visually impaired population and is dedicated to the interdisciplinary approach to education, research and patient care.

A. Institutional Background

In order to fully understand the nature and role of the proposed graduate program at the Pennsylvania College of Optometry, a brief history of the institution is presented. On October 6, 1919, the unique leadership ability of Dr. Albert Fitch and his perception of the public's need for better trained optometrists gave birth to the Pennsylvania College of Optometry. This combination of professional leadership and responsiveness to societal needs has continuously been the hallmark of what its founder in 1919 called "a proper college of optometry that must compare with any of the colleges of the other health professions, such as medicine and dentistry, and be on a par with the best of them."

Dr. Albert Fitch foresaw and built a college of optometry that not only reflected contemporary professional values and practices but, more importantly became an agent for their advancement. It is not surprising, therefore, that the college can reflect with pride on its unique accomplishments during the presidencies of Dr. Albert Fitch (1919-1960) and Dr. Lawrence Fitch (1960-1972). In 1923 this college became the first non-proprietary school or college of optometry to award the Doctor of Optometry degree upon successful completion of its course of studies. It was the first school or college of optometry to be granted permission to award this degree by a state legislature. It was the first independent health professional institution to receive regional accreditation (1954). The college established a two year undergraduate prerequisite for admission to the four year professional program in 1955 and, thus, formulated for the first time the six year educational program which set the standard still utilized today by the Council on Optometric Education. In 1961, the college received its initial state aid from the Commonwealth of Pennsylvania, the first independent school or college of optometry to receive this type of state support.

Dr. Norman E. Wallis was appointed President in 1972 and immediately seized upon the heritage of the institution. Through bold and imaginative leadership, he continued to mold the educational program so that it maintained its preeminent role within the profession. The programmatic and curricular changes effected since 1972 were built upon seven premises which propelled the institution into the forefront of optometric education and practice, a position still held today. A number of dramatic changes have taken place over the past decade. One of the most significant innovations was the construction of The Eye Institute, a $5.1 million on-campus, clinical education and patient care facility, which has become a national model for the delivery of primary eye care and for the interaction of the professions of optometry, ophthalmology and opticianry. Other changes included an expanded and diversified Board of Trustees; a strengthened administrative structure with a new Vice President for Institutional Advancement (Development); the Full Cost of Education

Concept; a promising research program and increased extramural support; development of new programs, including an Optometric Technician Program and the proposed Master of Science Degree program; a streamlined and more varied curriculum that includes electives, independent study and student research options; a more efficiently staffed and responsive library, and an expanded and balanced clinical educational program, both on and off campus.

On September, 1979, Dr. Melvin D. Wolfberg was appointed President and committed himself to the College's thrust toward academic excellence. He has strongly supported a growing research program; dramatically increased foundation and business support; strengthened relationships between the college and the alumni, the profession, and the local community; altered the administrative structure of the college to improve efficiency and accountability, and emphasized fiscal restraint and financial management. In addition, he has recognized that the college's long-range planning process offers the best hope for meeting the challenges in a very direct and comprehensive manner. It is the long-range planning process that not only guides our efforts, but also fuels the institution's drive toward and commitment to academic excellence.

B. Institutional Planning Initiative

Probably the most significant single event that has occurred at the college during the past ten years was the establishment of an institution-wide, continuous planning process. Recognizing the critical role that long-range planning must play in an academically and fiscally viable institution, the college initiated a comprehensive planning process in 1975, with the consultation of the Center for College and University Planning, and moved toward the goal of developing a comprehensive Five Year Plan.

The Five Year Plan developed by the College and formally approved by the Board of Trustees on January 28, 1979, addressed not only the immediate difficulties facing the institution, but also the long-range needs of an independent college of optometry. It was developed by the efforts of an institution-wide Long-Range Planning Committee which contained representatives from all the major college constituencies, including the Chairman of the Board of Trustees, the President, the Dean of Academic Affairs, the Vice President for Finance and Administration, the Dean of Student Affairs, the Executive Director of The Eye Institute, the President of the Alumni Association, the President of the Faculty Organization, and the President of Student Council. The college realized that the Five Year Plan and its subsequent revisions represented neither the beginning nor the end of the college's planning process. Rather it constituted the considered projection of the college's direction and thrust over the next five years. The plan was developed with an acute recognition of both internal and external forces affecting the future of the college, including the changing public expectations about eye care, the growing influence of governmental legislation and regulation, the demands and expectations of the professional community and, most importantly, the realities of present and future fiscal constraints.

The long-range planning process has resulted in a clear statement of institutional purpose, a well-defined mission statement, and specific goals and objectives that will guide the institution for many years. It has created a greater sense of institutional awareness and accountability, as well as an openness which encourages participation and commitment. The goal of the process is to integrate planning into the day-to-day activities of the institution, rather than have it seen as a parallel or competing activity. It has become increasingly recognized, therefore, that the long-range planning process offers the institution the greatest hope for increasing and sustaining its academic vitality.

It was within this institutional planning process that the unmet needs of the low vision population emerged and strategies for enhancing professional training programs developed.

C. Institutional Philosophy and Mission

Since its founding in 1919, the Pennsylvania College of Optometry has had as its principle purpose the professional preparation of optometrists. The original Charter, as well as the Constitution and By-laws as formulated by Dr. Albert Fitch, identify "the purposes and objectives" of the Corporation:

> To establish and maintain a college of optometry;
>
> To provide educational facilities for those desirous of becoming proficient in the art and science of optometry;
>
> To place at the disposal of those interested the privilege of attending lectures and scientific demonstrations in the development of the theory and practice of the science;
>
> To foster and encourage the study of the science of optometry;
>
> To maintain a central organization to disseminate the latest information and results of all scientific research in the science, and to promote its general development.

The Pennsylvania College of Optometry was dedicated on May 6, 1920 based on this Charter. With the changing scope of the profession, and the changing needs of society, it became necessary that the college translate goals and objectives for the 1980's. A concern of the college has always been to graduate practitioners and to provide programs and facilities that are responsive to the various publics that it serves in society. As the college has developed, it has attempted to change its curriculum and activities to be responsive to society's need for new types of practitioners and programs.

On January 27, 1981, the Board of Trustees approved the recommendation of the College's Long Range Planning Committee to translate the "purposes and objectives" of the corporation, as reflected in the original Charter of 1920, into the following mission statement:

> The mission of the Pennsylvania College of Optometry is to meet a public need primarily by offering programs of excellence which educate and graduate doctors of optometry capable of providing primary health care services through the prevention, diagnosis and management of ocular and visual disorders.

The definition of a Doctor of Optometry and the Mission Statement of the college have served as the principal guiding documents for the continuous long-range planning process that is occurring at the college. The specific goals and objectives of the various areas of responsibility within the college are directed toward producing graduates who can fulfill the above definition.

In order to more clearly translate the Mission Statement of the college into specific objectives for the various areas of responsibility, it was decided by the 1982 Self-Study Steering Committee to develop "Goals of the College" which complement and flow from the Mission Sttement and which indicate how the mission is to be achieved. The following statements, which serve as working hypotheses for the various areas of responsibility, were formally approved by the Board of Trustees on October 26, 1981:

1. To provide educational programs that will train optometric graduates to fulfill an expanded role as primary health care providers in the prevention, diagnosis and management of ocular and visual disorders.

2. To recruit, admit, support, retain graduate and place students who process the highest ethical and academic qualities, with appropriate representation of minority and societal demographic distribution.

3. To recruit, retain and continually develop faculty, administrators and staff with highest competencies and personal qualities to assure the continued excellence of the academic programs and college operations.

4. To operate a fiscally viable institution through efficient and effective management practices and marketing, leading to increased financial resources and endowment.

5. To raise the level of competency of the practicing optometrist by encouraging the pursuit of likelong learning through providing continuing and post graduate education.

6. To provide high quality vision and health care services to the public through The Eye Institute and the college's associated clinical programs.

7. To conduct research and other scholarly activities which add to the body of knowledge in basic and applied health sciences.

8. To develop and implement residency, graduate and/or technical level programs which complement the basic optometric program and assist in meeting the visual needs of the public.

9. To participate in the representation of the profession philosophically, legislatively, and inter-professionally on all educational matters pertaining to the delivery of primary care through optometry in order to maximize the potential of the college's graduates.

10. To encourage college, community, professional, and public service by the faculty, administration, staff, and students.

It is quite clear to the entire college community that the current Mission Statement and Goals of the college are not engraved in stone, but serve only as a vehicle to allow the institution to evaluate itself against its stated purpose. As the needs of the public change, and the role and responsibility of the profession change or expand, the College must be in a position to modify its mission and goals concurrently. As an institution, we feel that one of our greatest strengths is flexibility--flexibility to adjust programs and priorities to meet the changing needs of the public we serve and the students we educate.

D. Academic Development Premises

In 1979, in response to the explicit mandate contained within the Five Year Plan to expand the College's academic programs beyond the Doctor of Optometry Degree Program, the Office of Academic Development (OAD) was established. This office was charged with the responsibility to achieve the above goal. Its efforts have been guided by five (5) premises:

1. Any new academic program must be based upon a well-documented public need.

The unmet service needs of the low vision/primarmally impaired population have been clearly documented in a number of sources. Moreover, there is a critical need to enhance the training programs of eye care, education, and rehabilitation professionals serving this population. (Section II.)

2. Any new academic program must be fiscally self-sustaining.

   Utilizing a combination of extramural and intramural funding, the College has developed a long-term financial plan that promotes and assures the fiscal viability of the proposed program. (Section V.)

3. Any new academic program must be built on institutional strengths and be complementary to the Doctor of Optometry Degree Program.

   The College has placed major emphasis on the maximization of existing institutional resources, and especially on capitalizing on the unique strengths it has in the area of low vision. Moreover, in order to further its goal of academic excellence, new programs must be fully integrated into existing programs such that they are mutually supportive. (Section IV.)

4. Any new academic program must be based upon a planned synergistic relationship among education/training, research and service delivery.

   In order to assure programmatic responsiveness, training and research, must be derived by service delivery problems. As a result, research results are assessed in a service delivery setting and disseminated through training. This concept permits broad-based research that is relevant to practitioners, encourages interaction and cooperation across disciplines, and accelerates the transmission of new knowledge from researchers to educators to practitioners. Faculty that contribute in each dimension are essential to program success. (Section III.)

5. Any new academic program should take full advantage of inter-institutional arrangements.

The College recognizes that the Philadelphia area has abundant teaching, research and service delivery resources that should be maximized in the development and implimentation of the proposed program. Integration of this graduate program into this community/ academic network is vital to the program's success.

II. NEED FOR THE PROGRAM

A. Background

"BLINDNESS" -- What does this word mean to the average person? From biblical days through Milton's poetry to current television programming, blindness has connoted total darkness, pity and dependency. Studies have shown that blindness is one of the most feared human conditions. This fear is shrouded in misconceptions and distorted attitudes. The most prevalent misconception about blind people is that they have no usable vision. However, the vast majority of the "blind" population does, in fact, "see" and many have considerable remaining vision.

At first glance, it seems a contradiction in terms to say that a blind person can see. This confusion is actually the result of our present system of labeling people as legally blind. Legal blindness is a term utilized for legal purposes, tax exemptions, eligibility for specialized education and rehabilitation services, etc. Persons are labeled legally blind if their measured level of visual acuity falls below 20/200 (unable to see the large "E" on an eye chart) or if they have less that 20° central visual fields (tunnel vision), and cannot be corrected with conventional lenses. Most people fail to realize that there is an entire spectrum of visual abilities included in the term legal blindness and that many persons "going blind" can avail themselves of an enormous variety of optical aids and specialized services to maximize their remaining vision.

Unfortunately, the professionals to whom millions of severely visually disabled individuals turn for assistance are among the very people who are ignorant of appropriate intervention which could significantly enhance these people's lives. This situation was poignantly documented by DeWitt Stetten, Jr., M.D., Ph.D. in his August, 1981 article published in the New England Journal of Medicine. The article is entitled "Coping with Blindness". Dr. Stetten is legally blind yet retains some usable vision. The following excerpts from his article typify the experiences of many other low vision individuals across the country.

> In all, no less than seven distinguished and highly qualified ophthalmologists have considered and reviewed the condition of my retinas . . . through all these years, and despite many contacts with skilled and experienced professionals, no ophthalmologist has at any time suggested any devices that might be of assistance to me. No ophthalmologist has mentioned any of the many ways in which I could stem the deterioration in the quality of my life. . . . I am nevertheless troubled by the lack of regard which is apparently quite general in the profession for the quality of life of the person whose vision is seriously impaired.
>
> Typically the ophthalmologist confronted with a patient suffering from a disease of the eye performs the diagnostic and therapeutic manipulations, provides the patient with refractive correction and prescribes eye drops or other medication. If after all this the patient has a serious visual impairment, the ophthalmologist is missing an extraordinary opportunity if he or she fails to direct the patient's attention to one or more of the aids and agencies designed to improve the quality of life of the visually handicapped person.

Within a week after Dr. Stetten's article was published, he received hundreds of replies from other low vision individuals, eye doctors, consumer groups, educators and rehabilitation specialists. These replies echoed his feelings, and stated he was "right on target" about the inadequacies in the delivery of services to the severely visually impaired population.

An internationally recognized resource for individuals such as Dr. Stetten is the William Feinbloom Vision Rehabilitation Center. This unique Center is one of only a few such Centers in the country. Its principal purpose is to improve the quality of life of severely visually impaired individuals. This is accomplished through maximizing vision and providing a complement of multidisciplinary services from personnel trained to work with the visually impaired. The Feinbloom Center is an integral part of the Pennsylvania College of Optometry's patient care and clinical educational facility, The Eye Institute. The Center has served thousands of American and international patients and enabled approximately 90% of these individuals to enhance their visual performance. Typically, patients enter the Center unable to distinguish facial details or read print because of various eye conditions leading to legal blindness. The majority of these individuals leave the Center with the ability to perform visual tasks such as reading small print, watching television from a distance, and seeing the faces of friends and family, whom they have not seen clearly for quite some time.

No miracles are being wrought at this Center. What is occurring is the maximization of each individual's visual potential. The interdisciplinary staff views each patient not as "blind" but as an individual with untapped and untrained visual capabilities. By combining the best of modern technology with a humanistic approach, a high success rate is consistently achieved. Nevertheless, patients often express anger and frustration to the staff about previous experiences. Comments such as the following are typical (WFVRC, 1980-81):

> "They told me I was going blind and that nothing more could be done."
>
> "I'm sick about the years I've already lost . . . all those years of losing hope that I'd ever be able to see clearly again."
>
> "Why didn't anyone tell me that places like this exist? We need to tell more people and spread the word all over."

These feelings are common to thousands of severely visually impaired individuals who have either been treated as if they were totally blind or who have been simply lost in the "blindness system" that exists in our country today. Too many health, education and rehabilitation professionals have just "given up" on them. Some rehabilitation agencies even go so far as to blindfold patients in preparation for total blindness. This sad situation occurs in spite of clear statistical documentation that the average visually impaired person will not go totally blind; instead, that person will probably retain some usable vision for the rest of his or her natural lifetime.

B. The Underserved Low Vision Population

The basic assumption underlining the development of this program is that there is a critical unmet need in the low vision population. Several sources clearly document the nature and distribution of the problem. Over the past several years there has been a heightened sensitivity to the needs of the low vision population. The following references document this increasing awareness:

> We have, then, a situation where people -- many people -- can be helped who are now being cast aside. This situation exists only because of lack of knowledge by optometrists, by ophthalmologists, by laymen, by social workers, and by agencies which would help if they knew better.
>
> Monroe Hirsch, 1964

> Because 80 percent of the individuals classified as legally blind have some usable vision, most of them can be placed in the low vision category.
>
> Kahn & Moorhead, 1973

> The American Foundation for the Blind recognizes that there is a critical need to develop standards for low vision care which will strengthen existing programs and provide guidelines for new programs.
>
> AFB, unpublished report, 1980

> The formulation of comprehensive standards for a low vision service fills a major need in the growth and development of these important services... Recognition of this huge unmet need led to a request from the AFB Advisory Committee on Low Vision that the National Accreditation Council (NAC) develop comprehensive standards for these services -- standards which can be used in accreditation to guide the growth and development of low vision services throughout the country.
>
> National Accreditation Council, 1980

Just how many Americans face the physical, psychological, social, vocational and personal adjustment problems associated with low vision? Most estimates are hampered by problems of identification and definition, which must be resolved before the incidence and prevalence of these disorders can be reliably determined. The estimates range from a low of 1.7 million individuals (Genensky, 1978) to highs described as 10,659,000 people seriously disabled because of impaired vision (Westat, 1976) and 11.4 million people with blindness and visual impairments (NIHR, 1981).

Low vision knows no barriers in that it affects rich and poor, old and young, all races, all creeds, and all countries. Although visual impairment afflicts all ages, the proportion of individuals affected varies among age categories. The two ends of the age spectrum, birth and old age, seem to hold the most danger for increase in sight-related problems. The advent of medical and technological breakthroughs which can save the life of an infant often have the side effect of damage to the visual system. Also, infants are now being kept alive who have congenital malformities, which may include brain and/or visual center damage. These babies are increasingly being brought to the attention of health professionals since sight is such a vital part of development and learning.

At the other end of the age spectrum, many people who grew up with adequate vision suddenly find themselves afflicted with severe visual impairment later in life through cataracts, senile macular degeneration, glaucoma, diabetic retinopathy, or retinitis pigmentosa, to name the most prevalent visual disabilities of the elderly population. The literature clearly states that the prevalence of blindness rises steadily with age, and that nearly one-half of the legally blind population is 65 years of age or older. (National Society for the Prevention of Blindness, 1966; Russell, 1980; The Framingham Eye Study, 1980). During the 70 years between 1900 and 1970, the total population of the United States grew to almost 3 times its size in 1900, while the older segment grew to almost 7 times its 1900 size--and is still growing faster than the under-65 portion (Sourcebook on Aging, 1977). This points out the rising population of elderly citizens and this, coupled with the relationship between visual problems and aging, underscores a growing and continuing need for visual rehabilitation.

In terms of age, the elderly form the largest portion of the visually disabled. In terms of sight, it can be demonstrated that the bulk of visual impairments fall into the category of low vision. According to Webster's dictionary, the term blindness means without the power of sight; sightless. However, the term low vision has a much more global connotation. It can be used when referring to persons with reduced vision that cannot be corrected by conventional means. Low vision individuals experience problems ranging from severe visual impairments, such as the ability to perceive only shapes and colors, to proficiency at reading anything except fine print materials. Despite the fact that the majority of these individuals do have a wide range of visual abilities, most of the low vision population being served today receive rehabilitation protocols which are designed for the totally blind.

One major reason this occurs is that both totally blind and low vision individuals can fall within the same legal blindness category. For legal purposes, tax exemption, rehabilitation services, etc., if a person falls below a 20/200 visual acuity or has less than 20° central visual fields, that person is considered "legally blind." Thus, persons with no vision and those with considerable remaining vision are both termed "legally blind." As Jahoda (1978) states: "More people are BLINDed by DEFINITION than by any other cause."

In the past two decades there has been an increasing awareness of the range of visual abilities covered by the catch-all term "blindness", yet, most of the "blind" can see. This is not a contradiction in terms but stems from the fact that the legal blindness concept has failed to recognize that there is an entire spectrum of visual capabilities (Colenbrander, 1978). Goodrich and Quillman (1980) state:

> Until recently nearly all those with visual impairments were commonly "lumped together: as being blind. Those who had residual vision were left to shift for themselves in the hope that "they would get along," and little consideration was given to exploiting their reduced visual capacities and rendering them productive members of society.

Exactly what proportion of the so-called "blind" population has some sight? As published in the 1979-80 Blindness Annual, "It has been estimated that as many as 80-90 percent of blind people have some residual vision..." The May, 1981 National Advisory Eye Council Panel Report states that over 90 percent of persons with severely impaired vision do not have total loss of visual function, but retain a degree of usable vision.

The need for rehabilitation services specifically tailored for low vision is documented in the literature. It can be hypothesized that since the advent of Low Vision Services, there has been a considerable shift in the need for extended rehabilitation services (Gordon, 1980-1981). Furthermore, information based on the most recent United States Bureau of the Census Statistical Abstracts (1976) indicates that there is a potential consumer population that may be as high as 9.5 million visually impaired individuals who may benefit from low vision aids (1977-78 AWWB Blindness Annual). However, according to Rosenbloom (1970), 85 percent of partially sighted patients are not being helped. As previously stated, a major cause for this lack of care continues to be the treatment and rehabilitation of most low vision individuals as totally blind persons.

C. Training Needs in Low Vision

In any type of vision care delivery system, the most important determinant of need comes from the population of consumers it serves. Consistently these consumers have voiced anger and frustration at the "system". The Feinbloom Vision Rehabilitation Center has documented how the vast majority of its patients have been previously misinformed, misled and delayed in their own attempts to discover and locate appropriate rehabilitation services.

Why are these conditions so prevalent? What is causing this major public health problem in the delivery of vision care to the severely visually impaired population? The heart of the problem lies in the disturbing fact that the overwhelming majority of providers in the field, including ophthalmologists, optometrists, general practitioners, as well as education and rehabilitation personnel, simply do not have the background to appropriately care for this segment of our population. As a result, thousands and possibly millions of Americans are treated as if they were blind while, in reality, the vast majority of them have enough remaining vision to be significantly helped through appropriate intervention. They can be helped not only in terms of maximizing the use of the vision they have, but in increasing their employability, independent living status and overall quality of life. The underlying cause of this problem is clear--the vast majority of training programs that prepare professionals serving the eye care educational and rehabilitation needs of the visually handicapped population are inadequate.

Typically, these training programs concentrate on the normally sighted and/or totally blind population and offer minimal education related to the needs of low vision individuals who constitute the vast majority of the visually handicapped population in the United States. According to the Department of Education's National Institute of Handicapped Research (1981) there are approximately 11.4 million severely visually impaired people in the country. The National Eye Institute, of the National Institutes of Health (1981), further estimates that over 90% of these people do not have total loss of visual function, but retain degrees of usable vision. Considering the great numbers of individuals who could potentially be helped to maximize their vision, why is the system of professional education falling short?

(1) Definitions and Attitudes

One of the major reasons for the inadequacies in the present educational system centers around the definitions, attitudes, and resultant labels placed on visually impaired individuals. As an example, the reader is asked to recall or visualize a situation where he or she is observing a blind person waiting at a corner to cross the street. What do you feel?

Often there will be mixed feelings of pity, sadness, even fear. These feelings are usually coupled with indecision as to whether or not help should be offered. In the time it takes to sort through these feelings, the person has already crossed the street. This usually results in a feeling of relief that one didn't have to deal with either the situation or the blind person. Misconceptions, inadequacies and ambiguity surround this situation. If one considers that this blind person may be just as intelligent, capable and independent in traveling as the next person, why then is this rush of negative and uncomfortable emotions present? It is simply because the person is blind. Once that label is attached, along with it goes the stigma of what blindness has meant to people over the ages and the gnawing fear of what it would personally feel like to be blind.

Training programs preparing professionals have played a significant role in perpetuating these labels and misconceptions. Eye care, education and rehabilitation specialists constitute the major professionals with whom a visually impaired individual interacts. The training programs for these professionals barely address the needs of low vision persons. Ophthalmologists concentrate on diseases and pathology of the eye, with medical and surgical intervention as the major focus of care. Many medical and optometry schools in the country fail to offer adequate coursework and clinical experiences in dealing with the low vision patient. Too often, the low vision person is informed that nothing more can be done to help, if either conventional lenses or medical/surgical intervention cannot correct the condition. The patient is either told that he or she is "going blind", is "already blind" or "it is time to prepare for blindness."

The following story was related by a patient who went to see her eye doctor because of redness in her eyes (WFVRC, 1978):

> Mrs. G. and her doctor were having an enjoyable and pleasant social conversation after which he examined her eyes. Upon looking into the back of her eyes he decided to provide a more extensive evaluation. After this evaluation, he held her hand and addressed her in a somber tone. "Margaret", he said, "I have some bad news for you. My tests show you have retinitis pigmentosa. It's a degenerative eye disease that leads to total blindness. We don't know the cause or the cure and I think you should start preparing yourself for the fact that we can't do anything more for you."

Mrs. G. felt a great deal of panic and depression as she related only to the hopelessness of her situation. Actually, this doctor should have said that there was nothing more he could do to treat her pathology, but that there were certainly many things that could be done to improve her visual performance as well as a number of services which could improve her independent functioning. Unfortunately, most doctors are unaware of all the specialized optical aids, education and rehabilitation services specifically designed for the low vision person. This information and exposure to other disciplines is not part of their professional training and, as a result, their visually impaired patients are not optimally served, unless they manage to get the requisite information elsewhere -- which is difficult to do.

It is easy to see why a professional, not fully informed, would have viewed Mrs. G's situation as a hopeless one. Even though a person might have remaining vision, it is the label of legal blindness, with all its negative connotations, which usually governs the situation. In the scenario described above, Mrs. G. eventually sought rehabilitation services in her home state. She was appalled and angered at the agency's insistence that she be blindfolded to learn skills and prepare for her eventual blindness with various arts and crafts activities. Indeed, she should have been appalled, as statistics show that the average visually impaired person (even someone with retinitis pigmentosa) will retain some degree of usable vision. Furthermore, she refused to accept a lowered set of standards (beginning her rehabilitation efforts with arts and crafts activities) simply because her visual status had changed.

This lowering of standards is universal. Many children are labeled blind who have considerable remaining vision. In the past, this label meant that many of these children were placed in schools for the retarded, because they were the only places offering services for "special" children. These same children were blindfolded to "conserve their sight". This concept of sight conservation has been proven not only erroneous, but actually detrimental to the functioning of the child's remaining vision. We have learned that remaining vision must be utilized if the child is to maintain and increase visual efficiency. Literature has shown that many children labeled blind are educated and raised as if totally blind. Eventually, because of lack of stimulation, they lose whatever potential vision they may have had. Large setments of this school age population, with appropriate intervention and low vision services, could be performing such tasks as reading and traveling without canes. Thousands of children have not reached their visual potential because of the ignorance of educators in serving this visually impaired population, and thousands of adults have been subjected to irrelevant rehabilitation programs because they were mislabeled as "blind", when remaining vision could be utilized and stimulated.

(2) National Needs Survey

The Pennsylvania College of Optometry in conjunction with the William Feinbloom Vision Rehabilitation Center, has conducted a National Needs Survey to document professional training needs in low vision. The survey was developed and administered in response to many patient complaints about the inadequate treatment they had received from various professionals and because of the growing demand across the nation for continuing education and short-term low vision training programs. Since consistent feedback confirmed the lack of training in the area of low vision, this formal attempt was undertaken to identify particular areas of training need. The Survey was also designed to determine whether a graduate program directed specifically to the needs of low vision individuals was deemed necessary. This Survey was administered to educators, eye care and rehabilitation specialists, counselors, continuing education specialists, administrators and college and university personnel preparation staff. A total of 318 professionals were surveyed at the following interdisciplinary professional conferences:

American Association of Workers for the Blind
National Biennial Conference, Oklahoma City, 1979

Association for Educators of the Visually Handicapped
Mid-Atlantic Regional Conference, New York, 1979

American Foundation for the Blind
Helen Keller International Conference, Boston, 1980

American Foundation for the Blind
National Training Workshop in Low Vision, Chicago, 1980

Council for Exceptional Children
National Convention, New York, 1981

American Association of Workers for the Blind
Biennial Conference, Toronto, 1981

The data from the Survey reflects a wide geographic range and a strong interdisciplinary response. The following data has been excerpted from the Survey to document the need for more extensive training in the area of low vision:

Q. What percentage of your average, yearly student/client caseload is:

R. Totally Blind -- 19.3% Low Vision -- 79.8%

Q. Do you feel your College/University Training program adequately prepared you for serving your:

R. Totally Blind Students/Clients -- Yes 73.5% No 26.4%
Low Vision Students/Clients -- Yes 26.4% No 73.5%

Q. What percentage of your College/University training curriculum was geared toward the:

R. Totally Blind Population -- 79.8%
Low Vision Population -- 17.4%

The results of this survey were not surprising and confirmed the training and educational needs of professionals in the area of low vision. The majority, 73.5%, felt they were adequately prepared for serving the totally blind population. In striking contrast, however, only 26.4% felt they were adequately prepared to serve the low vision population. The reason for these results is quite clear since these professionals reported only 17.4% of their college/university training curriculum was geared toward low vision. This figure becomes even more startling when this same group of professionals reports that 79.8% of their average, yearly student/client caseload consists of low vision individuals. Ironically, the same proportion, 79.8% of their curricula was geared, not toward low vision, but toward the totally blind population. Charts 1-4 graphically illustrate the inverse relationship between professional training emphasis and the actual population served.

In 1982, as part of a Regional Low Vision Workshop sponsored by the College and supported by the National Institute of Handicapped Research, another Needs Survey was conducted to ascertain what problems were being experienced by professionals in the field. Consistent with previous survey findings, the overwhelming majority of their patients/clients were low vision as opposed to totally blind. In addition, the survey (231 respondants) disclosed the gaps that existed in various professional groups in terms of lack of knowledge, client related problems and service delivery problems.

CHART 1

AVERAGE YEARLY STUDENT/CLIENT CASELOAD

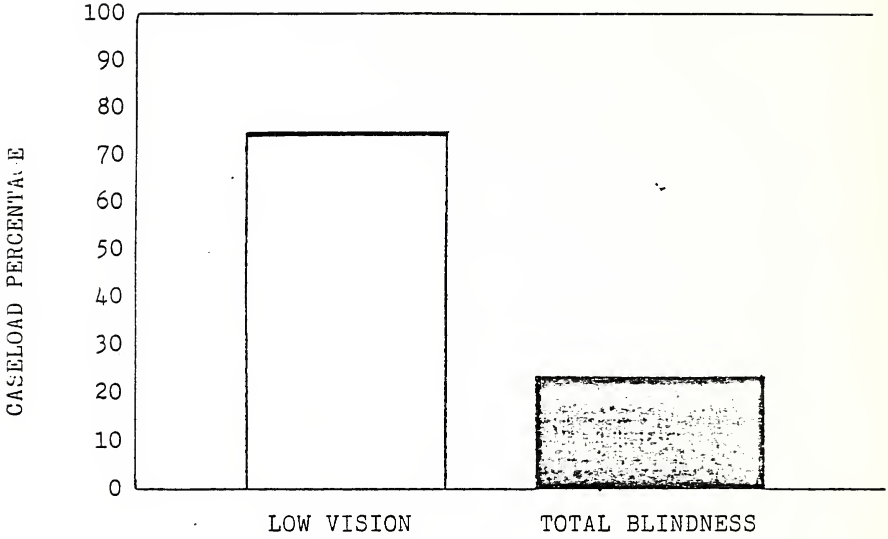


CHART 2

EMPHASIS OF COLLEGE/UNIVERSITY TRAINING

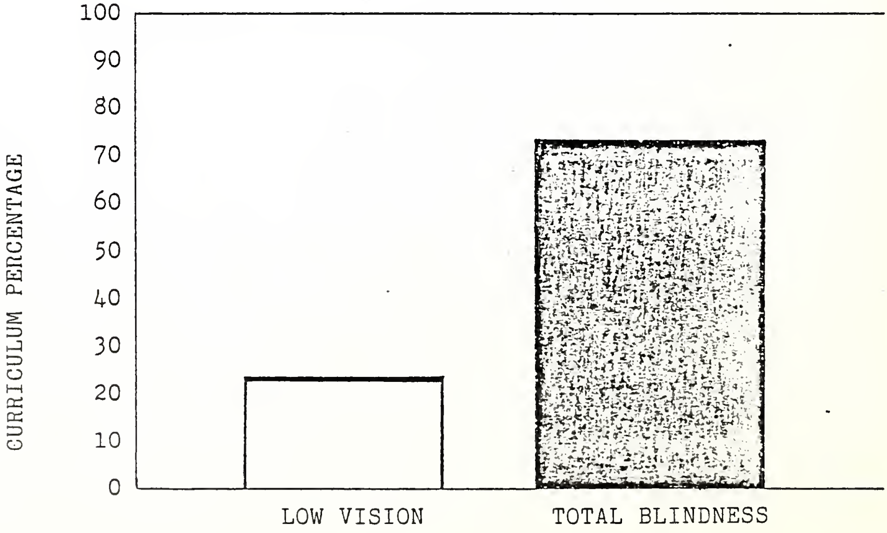


CHART 3

ADEQUACY OF TRAINING FOR
SERVING LOW VISION POPULATION

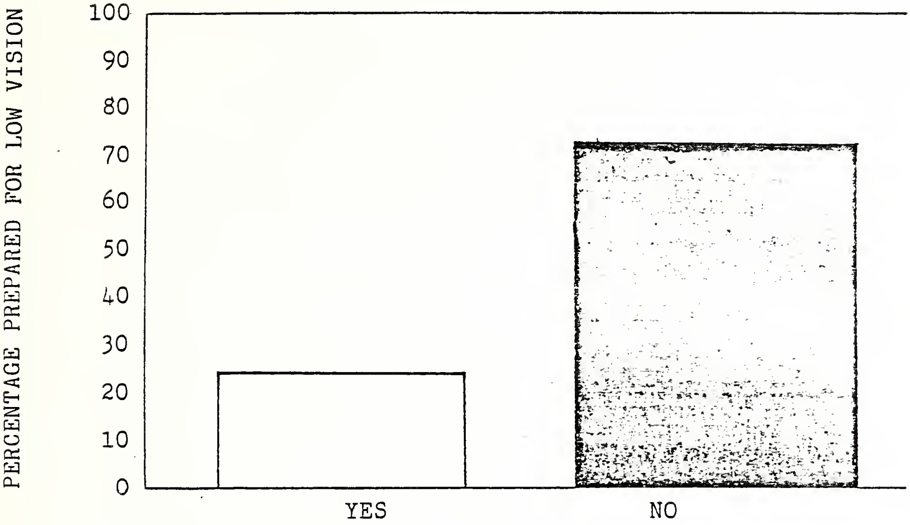
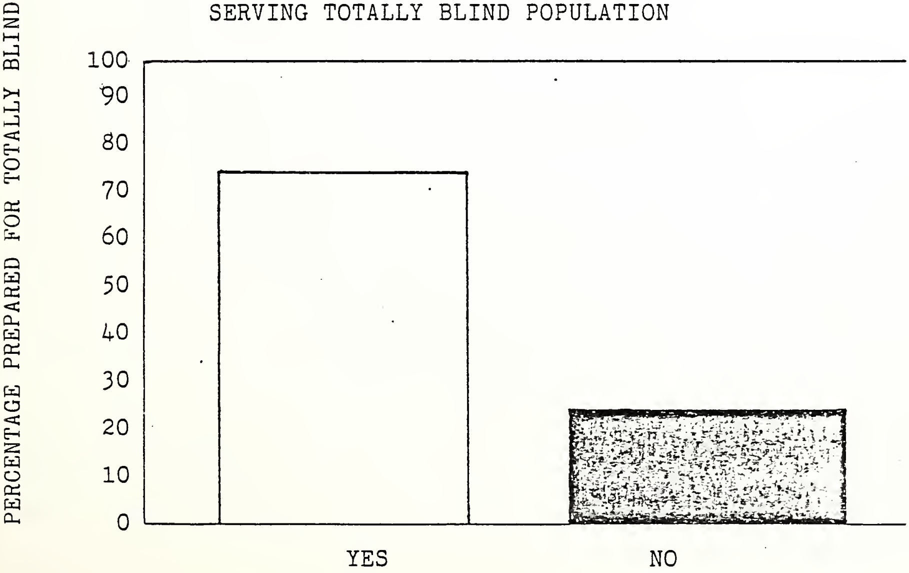


CHART 4

ADEQUACY OF TRAINING FOR
SERVING TOTALLY BLIND POPULATION



Problems experienced by education and rehabilitation professionals:

1. Training with visual field enhancement systems
2. Training without optical aids
3. Functional implications of low vision
4. Training with near optical aids
5. Vision stimulation
6. Working with multihandicapped
7. Modifying the work environment
8. Training with distance optical aids
9. Psychosocial aspects of low vision
10. Functional interpretations of the eye report
11. Working with the learning disabled
12. Environmental modifications for travel
13. Environmental modifications at home
14. Low Vision examination
15. Marketing strategies

Problems experienced by eye care professionals:

1. Resources for financial assistance for purchases of aids, or services
2. Increasing visual efficiency without optical aids
3. Training with visual field enhancement systems
4. Prescribing non-optical aids for specific patient goals
5. Vision stimulation
6. Training with near optical aids
7. Training with distance optical aids
8. Prescribing low vision aids such as telemicroscopes and visual field enhancement systems
9. Resources for helping low vision patients and their families adjust to low vision

The above findings were of significant help in developing the curriculum for the proposed program (Section III). Appendies A-C contain copies of the Survey Questionnaires and provides more detailed information on the results.

It is quite clear from this data that a severe educational problem exists in the preparation of professionals serving the visually impaired population. To ignore this problem is to perpetuate mislabeling, misconceptions and inadequate service to possibly millions of severely visually impaired individuals. Goodrich and Quillman (1980), two highly respected professionals in the field of rehabilitation for the visually handicapped, addressed this situation:

> In the future university programs will have to recognize the diversity and complexity of knowledge that is necessary to function effectively in the field of low vision. This will either require the development of new graduate programs or extensive modification of existing graduate programs.

The College feels that the development of a Master of Science (M.S.) Degree Program in Vision Rehabilitation is the most appropriate response to the problem. Why is the creation of a new graduate program a better approach than modifying existing programs? Although most professionals in the field have expressed a strong need for modifications in present programs, these changes have not been occurring at levels commensurate with the expressed needs. The majority of college and university faculty surveyed acknowledged that "not enough" is being done in the area of low vision. They indicated that time, finances and other resources are not available to accomplish this type of preparation within present program models. Since no major changes are fourthcoming from present college and university training programs, the answer logically lies in the creation of a new program to effectively train professionals to meet the needs of low vision individuals. Because the necessary reforms in existing curricula are not keeping pace with the current and projected future needs of the steadily increasing low vision population, the development of the new program is clearly mandated. This need is further documented by the respondents to the National Needs Survey. The overwhelming majority, 86.4%, felt that the creation of a new graduate program dealing specifically with the needs of the low vision population was necessary.

D. Student Demand/Occupational Outlook

As part of the 1980 National Needs Survey potential students were asked whether they would consider enrolling in such a program if it were available. Consistently, the responses from the various education and rehabilitation professionals surveyed indicated that the majority would consider enrolling in such a program. In addition, when asked whether they would consider enrolling if financial aid were offered, there was an approximately 25 percent increase in the positive response. In other words, the availability of financial aid to these students would increase the likelihood of their enrolling in such a program. This is an important point that is being addressed and will be discussed in further detail in Section V.

Within this Needs Survey, 25 administrators of various school systems, rehabilitation agencies, and low vision clinics were surveyed regarding their interest in the program. When asked whether they would consider hiring a graduate for their agency, approximately 90 percent responded positively. In addition, approximately 50 percent of these administrators indicated that they would consider sponsoring a student to some extent in the proposed program. These responses indicated a strong occupational outlook for the graduates of such a program. Given the apparent student interest in such a program (the College already has approximately 50 letters of inquiry regarding the program) and the positive response from potential employers of the graduates, the College feels that it is developing a truly responsive program that will serve both the graduates and the service delivery system.

III. PROGRAM DESCRIPTION

A. Program Mission and Philosophy

In response to the aforementioned need for the proposed program, the College has adopted the Competency Based Instruction (CBI) model to program planning, implementation and evaluation. (The CBI Model is discussed in more detail in Section III-E.) The first step in this model is the development of a mission statement that will serve as the philosophical and conceptual underpinning of the program. After much institutional discussion, the College's Institutional Planning Council on February 2, 1983, adopted the following overall mission statement and goals in the area of low vision rehabilitation.

> Because of its unique strengths in low vision, the Pennsylvania College of Optometry is committed to the fullest possible development of education, patient care, and research as they relate to low vision rehabilitation.
>
> In accomplishing this mission the following goals are established. These goals are perceived to be interdependent and of equal importance. The prioritization of these goals at any particular time will be determined by institutional goals and the availability of resources.
>
> 1. To provide educational programs that will enable optometric students to develop expertise in the low vision aspects of primary care optometry.
> 2. To provide high quality services in low vision to the public through the William Feinbloom Vision Rehabilitation Center and other associated clinical programs.
> 3. To conduct basic and applied research in low vision and to disseminate the results to other health care providers and the general public.
> 4. To develop and implement residency, graduate, continuing education, and/or technical level programs in low vision rehabilitation for optometrists and education and rehabilitation professionals to help meet the visual needs of the public.
> 5. To develop and implement the concept of an institute for low vision rehabilitation for the partially sighted which will serve as a unique international center of excellence to meet the above goals in education, research and service.

On November 18, 1982, the Institutional Planning Council reaffirmed its specific commitment to the proposed Master of Science Degree Program in Vision Rehabilitation. The following resolution was later adopted by the Executive Committee of the Board of Trustees and on January 31, 1983 was formally accepted by the Board of Trustees.

> In response to the unmet needs of the low vision population and the necessity of enhancing the professional training of eye care providers and rehabilitation and education specialists, the Pennsylvania College of Optometry reaffirms its commitment to the establishment and maintenance of the Master of Science Degree Program in vision rehabilitation. Furthermore, it underscores its continuous commitment to the enhancement of the optometric delivery system by the interdisciplinary approach to low vision service delivery, education, training, and research as the most responsive approach to meeting the physical, psychosocial, vocational and independent living needs of low vision individuals.

The College is therefore proposing a twelve month Master of Science Dgree Program in Vision Rehabilitation that is built on four (4) basic premises:

1. Each visually impaired individual has a unique set of physical, psychological and social needs.
2. These needs can best be met through problem-oriented, client-centered services utilizing an interdisciplinary team approach.
3. The education and training of professionals who will apply this treatment philosophy must parallel the interdisciplinary needs and nature of low vision care.
4. The program is designed to enhance the professional preparation of already existing disciplines in the eye care field, and is not designed to create a new discipline.

The Program has six (6) major goals:

1. To remediate the present disparity in college and university preparation programs by developing a graduate program which more accurately reflects the needs of the majority of the visually handicapped population.

2. To expand the knowledge base and professional practice methods of individuals working with the low vision population by designing a curriculum rich with experiential and academic learning, reflecting the wide range of personal, educational and rehabilitative needs of the low vision population.

3. To more thoroughly prepare professionals to act as agents of change and effect a broad impact in improved service delivery.

4. To create a program model which can be duplicated by other college and university preparation programs.

5. To develop a program which not only draws from, but contributes to, local and national knowledge and resources, as well as new forms of interinstitutional cooperation.

6. To effect a philosophical shift from traditional views that prepared individuals to approach all visually impaired persons as totally blind toward an individualized, problem-solving approach to meeting the broad spectrum needs of the low vision population.

B. Functions of Graduates

Students will be drawn internationally from a variety of disciplines including eye care, education, rehabilitation, and related professions. Such disciplines as optometry, ophthalmology, orientation and mobility, special education, rehabilitation counselling and rehabilitation teaching are expected to be the principle initial candidates for the program.

The following are five (5) hypothetical sample student outcomes:

Sample 1

A male optometrist from Nebraska, in practice for 6 years with an optometrist specializing in Low Vision, is proficient in contact lens evaluation and frequently consults with his partner on needs of low vision patients in this area. Through his contact lens practice and as part owner of an optical company, he is interested in current technology in low vision aids. Throughout his years of practice he has been active in continuing education courses to upgrade his skills, however, he has been frustrated by the lack of courses in the area of low vision.

He decides to enter the Master's Degree Program in Vision Rehabilitation as a non-degree candidate to gain formal training in low vision and to take electives in research, advanced optics and clinical experience.

His goal is to expand his practice to include more low vision patients and to do research for the improvement of low vision aids, both spectacles and contact lenses. He is currently President-elect of his state optometric association and program chairman for the annual meeting. He envisions using his newfound skills and knowledge to plan a conference on "Low Vision and Advancs in Technology related to the Field". Through his optometric association connections he often serves as a consultant throughout the state and is called upon to give speeches to local groups such as the Lions and Kiwanis, he will use his coursework in Vision Rehabilitation to add to his lecture repertoire.

Sample 2

A female Orientation and Mobility Specialist from Pittsburgh, Pennsylvania is a recent B.S.W. from Cleveland State University. When she interned at Pittsburgh Guild for the Blind Rehabilitation Agency she found that although her coursework had included only 1 class in low vision, 85% of her clients on caseload were visually impaired, not totally blind.

The agency has offered her a job and are willing to cosponsor her in the Master's program in exchange for 2 years work at the agency. She will therefore enter the program as a full-time degree candidate.

She plans to return to the agency with better practice skills in meeting the needs of the low vision population and an ability to coordinate low vision in-services for other staff members. She has long-term plans to establish a liaison with local eye care specialists and establish inter-institutional mechanisms for cross-referrals (medical, clinical, rehabilitation, functional).

Sample 3

A male Special Education teaher who is himself visually impaired and has taught for 4 years in a residential school in Los Angeles, California, completes his first year as an itinerant teacher and realizes that his training in low vision has been most inadequate. He now has the responsibility for counseling and support of classroom teachers, parents and the visually impaired children he serves. Despite his own visual impairment and his life-long membership in local, regional and national interest groups in low vision, he finds that he does not have a comprehensive view of resources in the field. In his current job he needs to be fluent in all areas of referral to answer many of the questions which he automatically transferred to the administration at the residential school.

He will be a part-time (summer) degree student and will complete the program in 3 years. He plans to focus his studies in the areas of assessment and resource referral.

His personal ambition is to be a continuing education lecturer in the area of visual impairment for other special education teachers.

Sample 4

A female Rehabilitation Teacher from Ontario, Canada was educated 20 years ago and left the field to raise a family for 15 years. She has since worked for the local Commission for the Visually Impaired for 5 years and desires to mold her previous teaching experience and current clerical position into a challenging career by upgrading her skills and moving into an administrative position in the field of low vision.

She will enter as a full-time degree student and complete the entire program, balancing her elective courses between practical and administrative areas.

Her ultimate goal is to use her newly-found expertise to establish liaison with local branches of agencies aiding and educating the blind and visually impaired. She hopes to generate a comprehensive program which will serve as a model to other provinces in Canda which have no coordinated services in this area.

Sample 5

A female nurse from Georgia has practiced public health nursing for 15 years. She is presently responsible for public school screenings for vision and hearing, a "well baby" clinic in a nearby rural community, and high-risk infant registers at area hospitals. As a nurse, the only continuing education abailable is in the medical sphere. In her present position she finds that she needs to know techniques for functional assessments and their implications, visual impairment, counseling, and, above all, referral information for state, regional and national resources in low vision. The advent of PL 94-142, which has increased "mainstreaming" and resulted in mandatory screenings for children recommended for special programs, has highlighted this need for skills. In addition, the law has resulted in an influx of referrals for vision evaluation. A local education agency has been funded for a pre-school multi-impairment education program through Title 6B monies. She serves as a consultant on this board although she has never been trained in screening or interpretation of results for visually and/or multi-impaired children.

She plans to attend the program as a full-time non-degree student taking only the specific courses necessary to upgrade her skills. These include: Anatomy and Disease, Functional Implications of Eye Diseases, Methods Course in Assessment, Basic Optics, Clinical Observations, Psycho-Social Implications, Interdisciplinary Approach to Low Vision Care, and Local, Regional and National Resources.

When her courses are completed, she plans to aid local educational agencies in appropriate identification and referral of visually impaired children. She will play an active part in identification, consultation and referral of children to low vision clinics and service providers (private practitioners), and as a regional resource and support person for other school, public health, obstetricians and nurses in the region. Her primary role will be as liaison between medical and educational spheres (i.e. she will seek and accept medical referrals from birth on and assist in appropriate secondary referrals for treatment, placement and/or education).

The interdisciplinary philosophy and low vision emphasis make the proposed program truly unique, the only one of its kind in the country. Since this interdisciplinary approach constitutes the foundation and guiding philosophy of the program, it is expected that interaction and sharing of ideas from the variety of disciplines represented in both the student body and faculty will facilitate and enhance the effort to improve professional preparation and the delivery of services to low vision individuals.

C. Program Requirements

The following admission and graduation requirements have been adopted as general guidelines for the Master of Science Degree Program. An interdisciplinary Joint Student-Faculty Admissions Committee will be utilized to evaluate each applicant's credentials and experience. Recommendations for acceptance will be made to the Dean.

1. Entrance Requirements

A. The applicants for the Master's Degree must have compiled an average of B (3.0 on a 4.0 scale) or above in their undergraduate program.

B. The applicant must hold a Bachelor's Degree from a regionally accredited college or university or a Masters or a Doctorate Degree from a regionally accredited institution with professional preparation in the following fields: Optometry, Medicine, Orientation and Mobility, Special Education, Rehabilitation Teaching, Rehabilitation Counseling, and other vision related professional training programs.

C. The applicant must have achieved acceptable levels of performance on national tests, such as, the Optometry College Admissions Test, Miller Analogies or Graduate Record Examination, depending on the professional degree program of the applicant.

D. The applicant must submit three letters of reference, one from an academic institution, one from a present or previous employer, and one of a personal nature.

E. The applicant must be personally interviewed by representatives of the Graduate Admissions Committee. Where this is not practically possible, alternative arrangements can be made.

It must be understood that the above are general guidelines and that each individual will be evaluated on his or her total qualifications. Applicants can be considered for admission into the Master's Degree Program under special conditions that would allow the applicant to fulfill the entrance requirements in some alternative manner. The College is an Affirmative Action Equal Opportunity Educational Institution and does not discriminate in terms of race, sex, age, national origin, religion/creed, or handicapping condition.

2. Graduation Requirements

Minimum standards for graduation from the Master's Program include the following:

A. An accumulative grade point average of B (3.0 on a 4.0 scale); credit for any two non-clinical courses in which a C was earned, maybe counted toward the degree.

B. A completion of a total of 35 credit hours with no more than three courses having been completed through a transfer of credit from another institution and/or satisfactory performance in a competency-based test.

C. The successful completion of a research project and the recommendation of the faculty advisor.

The College's overall academic policy will be utilized and applied to the graduate students where appropriate.

D. Curriculum

The following section represents the first stage in the development of the curriculum for the proposed low vision Master's program. The curriculum is designed to be student-centered, and to provide a balance between classroom and clinical experiences.

The following course materials emphasize the didactic portions of the curriculum. In order to aid the Master's student in meeting the required competencies clinical and laboratory experiences will provide a comparable portion of the learning activities. The laboratory coursework will provide such practical experiences as identifying and solving problems, analyzing and applying didactic information and role-playing to improve the professional practice skills of each discipline represented.

Many of the laboratories will be discipline-specific. Each student will be taught and supervised in the laboratory by a faculty member in the same profession. The courses in which the laboratories will be discipline-specific are:

- Normal and Abnormal Vision
- Functional Implications of Optical Principles
- Assessment and Evaluation of the Low Vision Individual
- Low Vision Habilitation and Rehabilitation

The levels of complexity of these subjects require specific teaching methods for each discipline.

The Human Development and Learning laboratory experiences will be mixed with discipline-specific and interdisciplinary emphasis. The remaining laboratory experiences in other courses will be interdisciplinary and will be taught/supervised by a variety of professionals. Establishing close relationships, common experiences and dialogue among disciplines will be stressed in these interdisciplinary laboratories.

The development of discipline-specific and advanced learning activities for students from different disciplines will remain an ongoing activity throughout the program, and will be monitored and supervised by the faculty members representing each discipline.

COURSE SEQUENCE

First Quarter	Credits
Introduction to Low Vision	1.00
Normal and Abnormal and Visual Functioning	3.25
Research 1	3.25
Assessment and Evaluation of the Low Vision Individual	3.00
Human Development and Learning: A Visual Perspective	3.25
Practicum 1: Observation	1.50
Quarter Subtotal	15.25
Second Quarter	
Functional Implications of Optical Principles	3.25
Research 2	3.25
Habilitation and Rehabilitation of the Low Vision Individual	3.00
Psychosocial Implications of Visual Impairment	3.25
Practicum 2: Observation and Analysis	2.00
Quarter Subtotal	15.75
Third Quarter	
The Team Approach to Low Vision	1.75
Management of Comprehensive Low Vision Services	2.75
Practicum 3: Supervised Field Practice	6.00
Quarter Subtotal	10.50
Fourth Quarter	
Practicum 4: Internships	7.50
Masters Thesis/Research Paper	4.00
Quarter Subtotal	11.50
TOTAL	53.00

INTRODUCTION TO LOW VISION

Catalog Description:

This course presents a multifaceted view of low vision. It will cover definitions, classifications, causes and incidences of low vision. The historical background of schools, agencies, and clinics serving low vision consumer groups; publications and low vision aids from 1900 to the present will be surveyed. The need for low vision services and varying philosophies of low vision care will be identified and discussed.

Lecture hrs./wk. - 1

Topical Outline

I. Low Vision
    A. Definition
    B. Classification

II. Incidence and Prevalence of Low Vision
    A. Low Vision Population
    B. Causes of Low Vision
    C. Methods of obtaining data

III. Low Vision - Historical Background
    A. Schools
    B. Agencies
    C. Low Vision Clinics
    D. Consumer Groups
    E. Publications
    F. LV Aids Development

IV. Need for Low Vision Services: The Increasing Low Vision Population
        1. Aging and Low Vision
        2. Population Growth and changes
        3. Prevention and Treatments of Blindness

V. Philosophies of Low Vision Care
    A. Interdisciplinary treatment
    B. Multidisciplinary treatment
    C. Single Disciplines
    D. Advantages and disadvantages of various systems

VI. Psychosocial views of Low Vision
    A. Psychosocial Implications in Low Vision
    B. Life cycle problems

Competencies: (The Student will be able to)

I.A. Define the term Low Vision from a performance standpoint.

I.B. Give two accepted classifications of Low Vision.

II.A. Report the most current national and worldwide estimates of Low Vision Individuals.

II.B. State the three leading causes of low vision and their estimated incidences in the U.S.

II.C. Name three methods which are used to determine prevalence and incidence of low vision and blindness.

III.A. Trace the emergence of orientation and mobility in schools.

III.B. Name regional and national low vision agencies.

III.C. List five regional low vision clinics and their available services.

III.D. Give a history of two low vision consumer groups.

III.E. Name three low vision publications.

III.F. Describe the development of low vision aids.

IV.A.1. Discuss how aging and low vision are interrelated.

IV.A.2. Describe population changes in the United States from 1900 to the present; describe estimated population changes for next 20 years.

IV.A.3. Name and discuss current medical treatment of previously blinding diseases, or conditions.

V.A. Discuss thoroughly the components of the interdisciplinary approach in a low vision clinic.

V.B. Describe the multidisciplinary approach to the care of low vision individuals.

V.C. Name three advantages and disadvantages in the single discipline approach to low vision service.

VI.A. Discuss the major psychosocial effects of low vision on self-image, family relationships, mobility and personal independence.

VI.B. Describe major problems in the development of low vision children in the early years, adolescence and adulthood.

Learning Activities

1. Develop new classification system for low vision.

2. Given an oral presentation and lead a class discussion on the major causes of low vision in one of the following populations: schools, agencies, clinics.

3. Write a paper for a Low Vision publication tracing the historical background of optical and non-optical low vision aids development from the early 1900's to the present.

4. Using current predictions of total U.S. population growth, increased life span, and improved medical technology, estimate the number of low vision individuals in the year 2030.

5. In an oral report, discuss the type of care one patient might receive in the following settings: interdisciplinary clinic, multidisciplinary service, rural private optometric practice.

References

1. Ault, C. The Marginal Man. (Unpublished manuscript) Western Blind Rehabilitation Center, Palo Alto, CA: Veterans Administration Hospital, 1976.

2. Donahue, W. and MacFarland, D. Aging and blindness. AAWB Blindness Annual, Washington, D.C.: AAWB, 1964.

3. Estimated Statistics on Blindness and Vision Problems, New York: National Society for the Prevention of Blindness, 1966.

4. Faye, E., Clinical low vision. Boston: Little and Brown, Co., 1976.

5. Faye, E. and Hood, C., Low vision services in an agency: Structure and philosophy. New Outlook for the Blind. June 1975, 69 (6), 241-248.

6. Fonda, G., Management of the patient with subnormal vision. St. Louis: C.V. Mosby Co., 1970.

7. Goldstein, H., Demography of blindness throughout the world. New York: American Foundation for the Blind, 1980.

8. Jose, R., Cummings, J., and McAdams, L. The model low vision clinical service. New Outlook for the Blind. June 1975, 69 (6) 249-254.

9. Kirchner, C., and Peterson, R., The latest data on visual disability from NCHS. Visual Impairment and Blindness, April, 1979, 73 (4), 151-3.

10. Kirchner, C., Peterson, R., and Suhr, C., Trends in school enrollment and reading methods among legally blind school children: 1963 - 1978. Visual Impairment and Blindness, Nov., 1979, 73 (9), 373-7.

11. Kirchner, C. and Peterson, R., Multiple impairments among non-institutionalized blind and visually impaired persons. Visual Impairment and Blindness, Jan., 1980, 74 (1), 42-4.

12. Kirchner, C., and Phillipa, B., Report of a summary of U.S. low vision services. Visual Impairment and Blindness, March, 1980, 74 (3), 122-4.

13. Low Vision and Rehabilitation Panel Report, Program planning Subcommittee, National Advisory Eye Council, Washington, D.C.: National Eye Institute, May 1981.

14. Mehr, E. and Freid, A., Low vision care, Chicago, IL: The Professional Press, 1975.

15. Newman, J. (ed.), A guide to the care of low vision patients. St. Louis: American Optometric Association, 1974.

16. Peterson, R., and Kirchner, C., Prevalence of blindness and visual impairment among institutionalized residents. Visual Impairment and Blindness, Oct., 1980, 74 (8), 323-6.

17. Public Service National Health Survey, Impairments by type, sex and age in the U.S. July 1957 - June 1958, Health Statistics. (PHS publication No. 584-B9), Washington, D.C.: U.S. Gov't Printing office, 1959.

18. Quillman, R., Low vision entering the 80's, AAWB Blindness Annual, Washington, D.C.: AAWB, 1980.

19. Vision Problems in the U.S., New York: National Society to Prevent Blindness, 1980.

20. Welsh, R., and Blasch, B., Low Vision, In R., Welsh and B. Blasch (Eds.) Foundations of orientation and mobility. New York: American Foundation for the Blind, 1980.

21. Zimmerman, D.R., Birth defects and visual impairment. Visual Impairment and Blindness, Jan., 1977, 71 (1), 2-12.

NORMAL AND ABNORMAL VISUAL FUNCTIONING

Catalog Description:

A study of the anatomy and physiology of the eye from a functional perspective. Includes an overview of the process of visual perception, ocular diseases and disorders, and the impact of selected systemic diseases and medications on visual functioning. Learning activities using visual distortion systems in a variety of tasks and settings are emphasized.

Lecture hrs./wk. - 3
Lab hrs./wk. - 1

Topical Outline:

I. Anatomy of the Eye - A Functional Emphasis
   A. External structures of the eye
   B. Internal structures of the eye
   C. Protective mechanisms
   D. Ocular Motilities

II. Visual Perception Related to the Physiology of the Visual System
   A. The Visual Pathway
   B. Visual Information
      1. Gathering
      2. Processing

III. Ocular Pathology
   A. External structures of the eye
   B. Internal structures of the eye
   C. Protective mechanisms
   D. Ocular motilities

IV. Common Diseases and Disorders of the Eye
   A. Diseases and disorders affecting central vision
   B. Diseases and disorders affecting peripheral vision
   C. Diseases and disorders affecting ocular motility

V. Functional Implications of Common Diseases and Disorders of the Eye - Classification by:

- A. Decreased visual acuity with no visual field loss
- B. Decreased visual acuity with central field loss
- C. Decreased visual acuity with peripheal field loss
- D. Normal visual acuity with visual field loss
- E. Ocular motility dysfunctioning

VI. An Overview of Systemic Diseases

- A. Impact on visual functioning
  - 1. Early childhood
  - 2. Adulthood
  - 3. The geriatric years

VII. Medications and Their Side Effects

- A. Ocular Medications
- B. Systemic Medications

Competencies: (The student will be able to...)

I.A. Identify and describe the parts of the eye, given a schematic drawing and/or model of the eye

I.B. Describe the function of each of the parts of the eye.

I.C. Identify and describe the protective mechanisms of the eye.

I.D. While observing a person tracking a light and/or object, identify or describe the person's ocular motility skills.

II.A.1. Draw the path of light rays, from object viewed at 5 ft., as they enter the eye and travel to the retina.

II.A.2. Trace the visual pathway from the retina to the visual cortex.

II.B.1. Describe the visual mechanisms as they relate to focus, fixation and fusion.

II.B.2. Describe the function of the brain in processing information received from the eye.

III.A.-D. List major pathologies affecting each part of the eye from external structures to the retina, using a model of the eye.

IV.A.-C.1. Identify and describe the pathological process and its effect on the visual process, given a common ocular pathological disorder.

IV.A.-C.2. Describe the area and function of the eye most seriously affected by selected diseases and disorders of the eye.

V.A.-E.1. List and describe common school, home and vocational activities which would be seriously hampered by diseases and disorders affecting: central vision, peripheral vision and ocular motility.

V.A.-E.2. Describe the functional implications for independent orientation and mobility, given a common ocular pathological disorder.

V.A.-E.3. List the common treatment options available, given selected ocular pathological disorders.

V.A.-E.4. List diseases and disorders which would most seriously affect selected tasks such as reading, writing, viewing T.V., operating machinery, etc.

VI.A.1. Describe the effects on the visual system of selected systemic diseases.

VI.A.2. Describe the manifestations of given systemic conditions on such areas as sensory functioning, motor coordination, communication skills, neurological functioning, etc.

VII.A. List common ocular medications and their side effects on visual functioning (including prescribed and non-prescribed medications).

VII.B.-C. Describe the ocular side effects of common systemic medications (including prescribed and non-prescribed medications).

Learning Activities:

1. Dissect a cow's or sheep's eye and examine it under a microscope. Observe chemical effects on muscle tissue.

2. Observe external and internal parts of human eye through the "teaching tube" of a slit lamp and compare with photos of diseased eyes.

3. Review slides of ocular disorders and pathologies.

4. Observe directly and/or via video-taped recordings the eye movements in normally sighted individuals as well as those with retinal pathologies.

5. While wearing visual distortion systems to simulate various visual acuity and field losses, perform a series of near and distance activities.

6. Wear visual distortion systems and travel in several outdoor locations looking for environmental cues to compensate for impaired vision.

7. Interview 3-5 people with different ocular pathologies. Prepare a written and oral report on the functional problems each person experiences related to their visual loss.

8. Develop an educational program with representations, pictures, slides, etc. for use with patients, their families, professionals and the public. Emphasize the functional implications of specific diseases and disorders.

9. Develop or acquire a series of slides or photos simulating the functional vision of persons with specific ocular diseases, in a variety of settings and situations.

10. Observe the functional performance of actual low vision persons and persons wearing visual distortion systems simulating the same condition. Observe similarities and differences in performance.

11. Role play situations requiring the description of diseases and their implications. Switch roles from doctor to patient, given a different, prearranged agenda for the meeting.

12. Given a number of eye reports, explain information in lay person's language and provide functional, day-to-day implications on such data as visual acuity, visual fields, ocular motility, etc.

13. Each student writes a 10-15 page paper on a selected disease of the eye. Format of paper will include description of pathological process and its effects on the visual system, common treatment options, prognosis and functional implications for home, work and travel. Each student will report to the class and provide copies of the paper, so that a resource compendium on diseases of the eye will be collected by all students.

References:

1. Abrahamson, Jr., I.A., Color Atlas of Anterior Segment Eye Disease. New York: McGraw-Hill, 1964.

2. Beliveau, M. and Smith, A., (eds.), "The Interdisciplinary Approach to Low Vision Rhabilitation." Stillwater: Oklahoma Clearinghouse for Rehabilitative Materials, Aug., 1980.

3. Berkow, R., (ed.), Geick Manual of Diagnosis and Therapy, 14th ed. Dohme Research Laboratories, 1982.

4. Bettman, J.W., Apparent accommodation in aphakic eyes, Am. J.Ophthal., 1950 33 921-928.

5. Brady, F.B., A Singular View New Jersey: Medical Economics, 1979.

6. Carpenter, R.H., Movements of the Eye. London: PION, 1977.

7. Clive, D., Griffen, J., and Hofstetter, H. (eds.), Dictionary of visual science, 3rd ed., Radnor, 1980.

8. Craig, J. and Paton, D., Cataracts: Development, diagnosis, management. CIBA: Clinical Symposium, 26 1974 No. 3.

9. Craig, J. and Paton, D., Glaucoma: Diagnosis and management CIBA: Clinical Symposium, 1976 28 No. 2.

10. Delaney, Jr., W.V., Physicians' guide to oculosystemic diseases. New Jersey: Medical Economics, 1982.

11. Eden, J., The Eye Book. New York: Viking Press and Penguin Books, 1978.

12. Faye, E.E., Clinical Low Vision. Boston: Little, Brown and Company, 1976.

13. Faye, E.E., The role of eye pathology in the low vision evaluation. J. Am. Opt. Assoc., 1976 47 No. 1.

14. Geeraets, W.J., Ocular Syndromes. Philadelphia: Lea and Febiger, 1965.

15. Goldenson, R.M. (ed.), Disability and rehabilitation handbook. New York: McGraw-Hill, 1978.

16. Gregory, R.L., The Eye and the brain - The psychology of seeing, (2nd ed.) New York: McGraw-Hill, 1973.

17. Guyton, A.C., Textbook of medical physiology, 6th ed., Philadelphia: Saunders, 1981.

18. Leitnan, M.W. and Gaitner, S., Manual for eye examination and diagnosis. New Jersey: Medical Economics, 1981.

19. Mehr, E.B. and Freid, A.N., Low Vision Care. Chicago: Professional Press, 1975.

20. Meredith, T.A., The Eye. Bowie, Maryland: Robert J. Brady Company, 1978.

21. Miller, S.C. and Milkie, G.M. (eds.), Current optometric information and terminology, St. Louis: American Optometric Association, 1974.

22. Monty, R.A. and Senders, J.W. (eds.), Eye movements and psychological presses. New York: Halsted Press, 1976.

23. Moore, K.L., Clinically oriented anatomy. Baltimore: Williams and Wilkins, 1980.

24. Oster, C., Sensory deprivation in geriatric patients. J. of Am. Geriatric Society, Oct. 1976, 461-7.

25. Ross, G. (ed.), Essentials of human physiology. Chicago: Yearbook Medical Publishers, 1978.

26. Rossman, I.J., Clinical geriatrics, (2nd, ed.) Philadelphia: J.B. Lippincott Co., 1979.

27. Scheie, H.G. and Albert, D.M., Textbook of ophthalmology, (9th ed.) Philadelphia: W.B. Saunders Co., 1977.

28. Sodeman, T. and Sodeman, W., Sodeman's pathologic physiology: Mechanisms of disease, (6th ed.) Philadelphia, London: Saunders, 1979.

29. Stein, H.A. and Shaft, B.J., The ophthalmic assistant. St. Louis, MO: C.V. Mosby Co., 1968.

30. The Human Eye: A Course in Programmed Instructions. Southbridge, Mass.: American Optical Corp., 1979 (Book 3 of 4).

31. Vaughan, D. and Asbury, T., General ophthalmology. Los Altos, Calif.: Lange Medical Publishers, 1980.

32. Weinstock, F.J., Ophthalmological aspects of geriatric care. Geriatrics, July, 1978 33 No. 7.

33. Wolff, E., Anatomy of the eye and orbit, (7th ed.) Philadelphia: Saunders, 1976.

RESEARCH 1

Catalog Description:

Approaches research from a viewpoint that prepares and encourages students to critically read and review research literature and apply research methods to their respective professional situations. Practical value of research and basics in research design, review and analysis are stressed. Ongoing emphasis is given to research application organized around topics of interdisciplinary interests and clinical relevance.

Lecture hrs./wk. - 3
Lab hrs./wk. - 1

Topical Outline:

I. Reading And Analyzing Research Papers
  A. Course Overview
  B. Understanding Research Methodology
    1. Single Subject Design
    2. Between Subjects Design
    3. Correlation Study
    4. Survey Design
    5. Naturalistic Observation
  C. Identifying and Analyzing Hypotheses
  D. Identifying and Analyzing Relevant Methods
  E. Identifying and Analyzing Results
  F. Identifying and Analyzing Conclusions

II. Introduction To The Scientific Method
  A. Inductive and Deductive Reasoning
  B. Causality and Correlation
  C. Systematic and Unsystematic Variance (Qualitative)
  D. Distinguishing Variables and Appropriate Generalizations

III. Literature Review Techniques

A. Review of Basic Library Skills
B. Computer Search Techniques
C. Compiling Relevant References

Competencies: (Students will be able to...)

I.A.1. Identify and describe frequently used research designs.

I.A.2. Identify different research designs, given readings representing various research methodologies.

I.A.3. Analyze the appropriateness of research designs, given research papers from a variety of disciplines.

I.B.1. Identify hypotheses, relevant methods, results and conclusions from research papers representing a variety of disciplines.

I.B.2. Critically analyze hypotheses, relevant methods results and conclusions given research papers from a variety of disciplines.

II.A. Identify and compare different approaches to general experimental analysis.

II.A.1. Identify instances of and differentiate between inductive and deductive reasoning in selected research papers.

II.B. Describe the advantages and limitations of correlational research.

II.C. Identify and list sources of systematic and unsystematic variance, using articles previously reviewed.

II.C.1. Choose the generalizations which are appropriate according to research standards, given the results of the previously reviewed articles.

III.A. Efficiently locate major references and resources which are relevant to various disciplines and critically evaluate the sources of information.

III.B. Identify key words and use appropriate, computer science procedures for locating references and resources, given a specific research topic.

III.C. Compile a list of relevant references using both library and computer search techniques.

III.C.1. Develop a resource file on active centers of low vision research.

Learning Activities:

1. After attending lectures on analysis of research papers of progressive levels of difficulty, students will attempt analysis of selected papers, with the help of the instructor.

2. Using a prepared checklist, student will critically review research papers from a variety of disciplines.

3. Small groups (2-4) of students will brainstorm topics, develop hypotheses and propose research designs for studies of students/clients/patients in each of the respective settings: school, rehabilitation agency, low vision clinic.

4. Each student will critically review a current research article representing one discipline and share copies of the article and oral review with all other students.

5. Each student will create and maintain an ongoing file of current research journal articles representative of a variety of disciplines.

6. Review the generalization and concurrent limitations of selected research examples, with specific reference to defining sources of systematic and unsystematic variance.

7. Each student will participate in a facet of data collection in the William Feinbloom Vision Rehabilitation Center database. Generate a hypothesis, obtain data and write a two page report of the findings.

8. Each student selects an on-going research project and intermittently reports to class on various phases of the research (e.g., initial planning, research preparation, pilot testing, data collection and summary phases).

9. All students will master basic computer use for research purposes.

10. Each student will be responsible for conducting a computer search for a chosen topic of research.

11. Each student will prepare a written report and review (for their resource file) of a librarian's lecture on the didactic survey of databases and techniques used to access them.

References:

1. Bickson, T.H. and Bickson, T.K. Functional problems of the visually impaired: A research approach; Santa Monica, CA: The Rand Corporation, 1981.

2. Gitman and Woodford-Williams, E. (eds.) Research, training and practice in clinical medicine of aging. Interdisciplinary Topics in Gerontology: 1970, Vol. 5.

3. Hayes, C.S. and Weinhouse, E. Application of behavior modification to blind children. Journal of Visual Impairment and Blindness, April 1978, 72 (4), 139-146.

4. Inglish, J. and Jackson, J. Research and composition: A guide for the beginning researcher, 1977.

5. Jones, R. Design and analysis problems in program evaluation. In: Davidson, P., Clark, F. and Hamerlynk, L. (eds.), Evaluation of behavioral programs in community, residential and school settings. Campaign, Il.: Research Press, 1975.

6. Kerlingen, F.N. Foundations of behavioral research. New York: Holt, Reinhart and Winston, 1964.

7. Levin, M. Understanding psychological research, New York: John Wiley and Sons, New York, 1979.

8. Lewis-Beck, S. Applied regression, An introduction, Beverly Hills, CA: Sage Publications, 1980.

9. Mahoney, M.J. Experimental methods and outcome evaluation. Jour. Consulting and Clin. Psych., 1978, 47 p. 8-661.

10. Scriven, M.S. The methodology of evaluation. (AERA Monograph Series on Curriculum Evaluation, Book I). Chicago: Rand McNally, Company, 1967.

11. Special Issue: "Methodology in Clinical Research", Jour. of Consulting and Clin. Psych. August 1978, 46 (4).

12. Suchman, E.A. Evaluative research. New York: Russell Sage Foundation, 1967.

13. Velleman and Hoaglin. ABC's of Exploratory Data Analysis, Duxbury Press, Boston, 1981.

14. Weiss, C.H. Evaluation Research: Methods of Assessing Program Effectiveness. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1972.

15. Wodanski, John S. The Role of Research in Clinical Practice, University Park Press, Baltimore, 1981.

ASSESSMENT & EVALUATION OF THE LOW VISION INDIVIDUAL

Catalog Description:

Presents the critical components of assessment and evaluation of the low vision individual from the perspectives of a variety of disciplines including: Optometry, Orientation and Mobility, Special Education, Rehabilitation Teaching, and related fields. Emphasis is given to analyzing visual functioning, the visual environment and the work / school / recreational needs of the low vision person. Incorporates the early development of visual skills, task analysis, and the integration of functional vision with other modalities.

Lecture hrs./wk. - 2
Lab hrs./wk. - 4

Topical Outline:

I. Principles of Assessment and Evaluation
  A. Purposes of assessment and evaluation
  B. Approaches to assessment and evaluation
    1. Formal techniques; Discipline-specific, age-specific, standardized and non-standardized instruments
    2. Informal techniques
      a. Task analysis
      b. Observation methods
      c. Subjective findings

II. Components of Comprehensive Assessments and Evaluations
  A. Discipline-specific assessments, evaluations and interpretations:
    1. Education
    2. Eye care
    3. Orientation and mobility
    4. Rehabilitation counseling
    5. Rehabilitation teaching

B. Low Vision Individual's Self Report
    1. Observation skills
        a. Verbal
        b. Non-verbal
    2. Interviewing skills

C. Environmental Assessment and Evaluation
    1. Effects of environment on visual functioning
    2. Interaction effects: Environmental, disease-related and personal factors in various settings (home, work, recreation, travel, etc.)

III. Data Management
    A. Disciplinary Record-keeping
    B. Comprehensive Information Systems
    (e.g., computerized datasets; client portfolios, etc.)

Competencies: (Students will be able to:)

I.A. Differentiate between the purposes of testing/assessment when used in the contexts of casefinding, screening, diagnosis and evaluation.

I.B.1.1. Identify formal and informal instruments appropriate for determining functioning levels according to disciplinary practices.

I.B.1.2. Use and interpret both formal and informal instruments appropriate for determining visual functioning.

I.B.2a.1. Identify the behavioral components of specified human performances. (Task analysis requires students to list and analyze the components/ steps involved in performing a specific task.)

I.B.2a.2. When presented with a minimum of two tasks, (e.g., writing a check, differentiating a piece of clothing, reading a book, pouring liquids, playing cards or checkers, etc.), the student will demonstrate the ability to analyze the task into discrete behavioral components so that they respond to the learning needs of (1) an individual with limited spatial concepts; (2) an individual who is unfamiliar with the task to be accomplished; and (3) an individual who had previous familiarity.

I.B.2.b Use a variety of observation and recording techniques to collect information concerning the low vision individual's functioning.

I.B.2.c. Interpret the low vision individual's presented data in order to facilitate remediation.

I.B.2.c. Interpret or explain in lay terminology the content of written reports from all related disciplines.

II.A. Identify the components of an appropriate low vision examination. (All students will be able to identify the appropriate components of all disciplinary evaluations. Students will perform evaluations in their own disciplines only).

A.1 Identify the components of an educational evaluation for a given low vision child/youth of school age.

A.1.a. The educational students will perform an educational evaluation.

A.2. Identify the information that can be expected from an optometric evaluation for a specific low vision patient.

A.2.a. The eye care students will perform a complete low vision examination of a visually impaired patient.

A.3. Identify the components of a functional mobility low vision evaluation.

A.3.a. The mobility students will perform a functional vision mobility evaluation.

A.4. Identify the components of a functional low vision rehabilitation teaching evaluation.

A.4.a. The rehabilitation teachers will perform an evaluation of a low vision patient's skills in activities of daily living in both familiar and unfamiliar environments.

Note:

Functional low vision evaluations will be conducted with individuals in a number of age levels--infancy, childhood, adolescence, adulthood and old age. These evaluations should also include low-functioning individuals.

II.B.2. Demonstrate in role-playing the ability to use appropriate interviewing skills to elicit information and problem-solving in the low vision person.

II.C.1.a. Presented with a role-played situation related to activities in a range of areas (e.g., work, home, school), the student will identify problem areas (e.g., utilization of color and contrasts, desirable distance from the task, etc.) that a low vision client demonstrates.

II.C.1.b. List the factors (sensory, physical and environmental) that may be important in a given task, as they pertain to evaluation by a specific discipline(e.g., the rehabilitation teacher) in prioritizing the low vision needs of the client.

II.C.2.a. Evaluate the specific environmental factors which may effect performance of the task and incorporate this information into (1) the prescribing of aids (for eye care), or (2) the training with aids (for rehabilitation personnel).

II.C.2.b. Evaluate the client's visual efficiency/utilization of low vision in a variety of environments. Incorporate this information into (1) the prescribing of aids (for eye care), or (2) the training with aids (for rehabilitation personnel).

II.C.2.c. Identify and describe the characteristics of the person/client which may have impact or influence on the rehabilitation process (e.g., personality, motivation, self concept, intelligence, sex, age, etc).

III.A. Review and evaluate available disciplinary record-keeping systems.

III.B. Use available record-keeping systems for collecting and maintaining comprehensive information on a low vision individual.

Learning Activities:

1. Match orally or in writing a particular low vision individual with an appropriate assessment instrument in a variety of disciplines.

2. Conduct a functional vision evaluation of an assigned low vision individual.

3. Conduct an interview with a low vision individual (or observe a low vision child/youth) in order to obtain information relevant to the functional vision evaluation.

4. Read/review real client/patient reports and decide on the appropriate assessment tools for each of a number of disciplinary evaluations.

5. Observe a low vision client involved in a specific task (e.g., using a 5x microscope); prepare a written task analysis of that activity for that client.

6. Create an environmental checklist and use it to assess the optical features (e.g., lighting, glare, contrast, etc.) in a particular place (for example, a home, a supermarket, a restaurant, a workplace, etc.). Prepare a brief report including suggestions in environmental modifications needed.

7. Role-play a client-clinician scene including a variety of problems. Act out, then analyze and discuss possible solutions to problems.

8. Observe and analyze a videotape of an actual doctor-patient encounter in the clinic. Discuss alternative ways of handling the situation.

References:

1. Barker, J. and Barmatz, H., Eye functions. In. W.K. Frankenburg and B.W. Camp (Eds.) Pediatric screening tests. Springfield, Illinois: Charles C. Thomas, 1975.

2. Berman, R., Fundamentals of Visual Fields. Review of Optometry, Sept., 1978, 53-64.

3. Bischoff, R.W., Listening: A teachable skill for visually impaired persons. Journal of Visual Impairment and Blindness, Feb. 1979, 73 (2), 59-67.

4. Cohen, P.C., The impact of the handicapped child on the family. In Casework Services for Parents of Handicapped Children. New York: Family Services Association of America, 1963.

5. Faye, E., Clinical low vision. Boston, MA: Little, Brown and Co., 1976.

6. Duncan, J., Gish, C., Mulholland, M.E. and Townsend, A., Environmental modification for the visually impaired: A handbook. Journal of Visual Impairment and Blindness, Dec. 1979, 71 (10), 441-45.

7. Hoover, R.E. and Kincaid, M.C., The ideal workup in the ophthalmologist's office. The Sightseeing Review, 1978, 48 (1), 7-18.

8. Jose, R. and Bauman, N., Minimum diagnostic sequence. Course handout.

9. Langley, M.B., Psychoeducational assessment of the multiply handicapped blind child: Issues and methods. Ed. Vis. Hand., 1979, 10 (4), 87-111.

10. Langley, R. and Dubose, R. Functional vision screening for severely handicapped children. The New Outlook for the Blind, Oct., 1976, 7 (98), 346-50.

11. Mehr, E.B. and Fried, A.N., Low vision care. Chicago, Illinois: The Professional Press, Inc., 1975.

12. Newman, J. (ed.), A guide to the care of the low vision patient. St. Louis, Mo.: American Optometric Association, 1974.

13. Nobles, L. and Bink, M., Sensory integration in the rehabilitation of blind adults. American Journal of Occupational Therapy, 559-563.

14. Oster, C., Sensory deprivation in geriatric patients. Journal of American Geriatric Society, Oct., 1976.

15. Rosner, J., Pediatric Optometry.

16. Ruthberg, J., The orientation and mobility functional low vision evaluation. In Beliveau, M. and Smith, A.S. (Eds.) The interdisciplinary approach to low vision rehabilitation. Unpublished manuscript, 1980.

17. Scholl, G. and Schnur, R., Measures of psychological, vocational and educational functioning in the blind and visually handicapped. New York: American Foundation for the Blind, 1976.

18. Silberman, R.K., Assessment and evaluation of visually handicapped students. Journal of Visual Impairment and Blindness, March, 1981, 75 (3), 109-114.

19. Smith, A. and Cote, K., Look At Me - A Resource Manual for the Development of Residual Vision in Multiply Impaired Children, Phila: PA College of Optometry, 1982.

20. Swallow, R.M., Fifty assesment instruments commonly used with blind and partially seeing individuals. Journal of Visual Impairment and Blindness, Feb., 1981, 75 (2), 65-72.

21. Swallow, R.M. (ed.), Assessment for visually handicapped children and youth, AFB Practice Report. New York: American Foundation for the Blind, 1981.

22. Swallow, R.M., Mangold, S. and Mangold, P. (eds.), Informal assessment of developmental skills for visually handicapped students, AFB Practice Report. New York: American Foundation for the Blind, 1981.

23. Warneck, L., The effect upon a family of a child with a handicap, New Outlook for the Blind, Dec., 1969, 63 (10), 210-15.

24. Weinstock, F.J., Ophthalmological Aspects of Geriatric Care, Geriatrics, July, 1978, 33 (7), 33-40.

HUMAN DEVELOPMENT AND LEARNING: A VISUAL PERSPECTIVE

Catalog Description:

The development of the human organism throughout the lifespan. The course will explore normal and abnormal development and how it interacts with cognition, maturation and physiology. Learning principles and their application for optimizing development including visual skills within the handicapped population will be discussed.

Lecture hrs./wk. - 3
Lab hrs./wk. - 1

Topical Outline:

I. Development of the Infant
  A. Cognitive
  B. Physiological
  C. Social Development

II. Development of the Child and Adolescent
  A. Cognitive
  B. Physiological
  C. Social

III. Maturation and the geriatric years
  A. Sensory systems
  B. Motor skills
  C. Physiological changes

IV. Major Learning Theories
  A. Modeling and Imitation Theories
  B. Classical and Operant Conditioning
  C. Social Theory

V. Vision in the Life span
  A. Vision related to the continuum of development
  B. Vision defined as a process

VI. Relationships with Visual Impairment
   - A. Sensory development and visual impairment.
   - B. Motor development, perceptual-motor skills and visual impairment
   - C. Cognitive development and visual impairment.
   - D. Impact of age of onset of visual impairment on development

Competencies: (Students will be able to)

I.A. Describe the basic principles of human development.

I.B. Differentiate the subsystems (motor, perceptual, cognitive, social-emotional, etc) of development and illustrate their interrelatedness.

I.C. Describe a sequence of major milestones in motor, cognitive and/or social development in infancy.

I.D. Describe current theories of attachment in infancy, and their application to parent-child interaction.

II.A. Describe a sequence of major milestones in motor, cognitive and/or social development in early and later childhood.

II.B. Describe the major physiological changes associated with growth periods: infancy, early and later childhood, adolescence.

III.A. Describe Erikson's theory of identity formation in adolescence.

III.B. Describe a sequence of major changes in adolescence, maturity and geriatric years in motor skills, sensory systems and/or social skills.

III.C. Describe and compare the impact of physiological changes in adolescence and in the geriatric years.

IV.A. Describe and compare several theories of learning, (e.g., Gesell, operant/classical conditioning, modeling, imitation, etc.).

IV.B. Describe Maslow's hierarchy of needs and its application to learning situations.

V.A. Describe the effects of development on vision in (a) infancy; (b) childhood; (c) adolescence; (d) adulthood; (e) the geriatric years.

V.B. Explain the visual process from sensory input through visual-motor integration.

VI.A. Describe the impact of significant visual impairment on overall development;

VI.B. Describe the impact of visual impairment on specific aspects of development in (a) infancy, (b) childhood; (c) adolescence; (d) adulthood; (e) the geriatric years.

Learning Activities:

1. Observe a fully sighted and visually impaired individual of the same chronological age in the following age categories:
    a. infancy
    b. childhood
    c. adolescence
    d. adulthood
    e. old age

    Compare/contrast observed behaviors. Include a discussion of visual impairment as a factor in determining behavior.

2. Observe the professional administration of a developmental assessment and prepare a written report on the results.

3. Choose one theory of learning and prepare a written report on its application to a low vision individual's attitude and performance in a specific situation.

4. Design a contingency management program using principles of operant conditioning for a variety of habilitation/rehabilitation problems.

5. Select, review and critique one developmental assessment instrument for use with each of the following age groups: infants, children, adolesents, adults, elderly individuals. Within the selection of instruments, include at least one from each of the following areas: cognitive, motor/physiological and social development.

6. Review, compare and contrast three theories of the impact of visual impairment on early development (e.g. Fraiberg, Warren, Hart).

References:

1. Adelson, E., Fraiberg, S., Gross motor development in infants blind from birth. Child Development 1974 Mar; 45 (1): 114-26.

2. Ambron, S., R., Brodzinsky, D. M., Lifespan human development. 2d ed. New York: Holt, Rinehard and Winston, 1979.

3. Barraga, C., Visual handicaps and learning. Belmont, CA.: Wadsworth Publishing, 1976.

4. Black child development in America, 1927-1977; An annotated bibliography. Compiled by Hector F. Meyers. Westport, CT: Greenwood Press, 1979.

5. Blackhurst, A.E., Berdine, W. H., An Introduction to special education. Boston, MA: Little, Brown, 1981.

6. Bond, E. K., Perception of form by the human infant. Psychological Bulletin. 1972 Apr., 77 (4): 225-45.

7. Bronstein, M. H., "Human Infant Color Vision and Color Perception" reviewed and reassessed: A critique of Werner and Wooten (1979A). Infant Behavior and Development. 1981 Apr., 4 (2): 119-50.

8. Bower, G. H., Hilgard, E. J., Theories of learning. (5th ed.) Englewood Cliffs, NJ: Prentice-Hall, 1981.

9. Cratty, Bryant S., Perceptual and motor development in infants and young children. (2d ed.) Englewood Cliffs, NJ: Prentice-Hall, 1979.

10. Dubose, R. F., Developmental needs in blind infants. New Outlook for the Blind. 1976 Feb., 70 (2): 49-52.

11. Fitts, P. M., Posner, M. I., Human performance. Westport, Ct.: Greenwood Press, 1979.

12. Gardner, J. K. (ed.), *Readings in developmental psychology*. Boston, MA: Little, Brown, 1978.

13. Gesell, A., *First five years of life*. New York: Harper and Row, 1940.

14. Goulet, L. R. (ed.), *Lifespan developmental psychology: Research and theory*. New York: Academic Press, 1970.

15. Hergenhahn, B.R., *An Introduction to theories of learning*. 2d ed. Englewood Cliffs, NJ.: Prentice-Hall, 1982.

16. Hill, W. F., *Learning: a survey of psychological interpretations*. (Rev. ed.) Scranton: Chandler, 1971.

17. Horowitz, F. D., *Review of child development research, Vol. 4*., Chicago: University of Chicago Press (originally published by Russell Sage Foundation 2 vol. 1964, 1966), 1975.

18. Ilg. F.L., Bates, L.B. Haines, Gillespie, J., *School readiness*, New York: Harper and Row, 1978.

19. Jastrzembska, Z. A. (ed.), *The Effects of blindness and other impairments on early development*. New York: American Foundation for the Blind, 1976.

20. Kuhn, T.S., *Structure of scientific revolutions*, (2d ed.) Chicago: University of Chicago Press, 1970.

21. *Life, the continuous process: Readings in human development*, compiled by Freda Rebelsky, with the collaboration of Anne Eshelman et al. New York: Knopf, 1975.

22. McCandless, B.R., Coop, R.H., *Adolescents: Behavior and development*. (2d ed.) New York: Holt, Rinehart and Winston, 1979.

23. Miller, S., Nunally, E.W., Wackman, D.B. and Friederichsen, R., Alive and aware: Improving communications in relationships. Minneapolis, MN: Interpersonal Communication Programs, 1975.

24. Navarick, D., J., Principles of learning: From laboratory to field. Reading, MA: Addision-Wesley, 1979.

25. Neisser, U., Cognition and reality: Principles and implications ofcognitive psychology. San Francisco: W.H. Freeman, 1976.

26. Paiget, J., Early growth of logic in the child. Edited by B. Inhelder. New York: W.W. Norton, 1969.

27. Paiget, J. and Inhelder, B., The psychology of the child. New York: Basic Books, Inc., 1969.

28. Schaie, K. W, Gribbin, K., Adult development and aging. Annual Review of Psychology. 1975, 26: 65-96.

29. Schwartz, A.N., Introduction to gerontology. New York: Holt, Rinehart and Winston, 1979.

30. Smith, F., Comprehension and learning: A conceptual framework for teachers. New York: Holt, Rinehart and Winston, 1975.

31. Stephens, B., Cognitive processes in the visually impaired. Education of the visually Handicapped 1972 Dec., 4 (4): 106-11.

32. Warren, D., Blindness and early childhood development. New York: American Foundation for the Blind, 1977.

33. Whaley, D.L., Malott, R., Elementary principles of behavior. Englewood Cliffs, NJ: Prentice-Hall, 1971.

34. Whitbourne, S.K., Adult development: The differentiation of experience. New York: Holt, Rinehart and Winston, 1979.

35. Wold, R.M. (ed.), Vision: Its impact on learning. Seattle, WA: Special Child publications, 1978.

PRACTICUM I - OBSERVATION

Catalog Description:

Exposes students to a wide range of service delivery settings including rehabilitation agencies and facilities, school settings, low vision clinics, multi-service resources agencies, etc. serving the visually impaired population. Students will be provided with opportunities to observe the functions of various agencies as well as all phases of the service delivery processes. Services provided to visually impaired individuals as well as the functions performed by each discipline will be emphasized. Guidelines for observing, recording and reporting data will be provided.

Lecture hrs./wk. - 1
Lab hrs./wk. - 2

Topical Outline:

I. Pre-observations
  A. Observation and reporting techniques
    1. Observable factors
    2. Differentiating between subjective and objective data in recording
    3. Recording formats (SOAP, IEP, IWRP, Informal/Formal, check-lists, other)
    4. Presenting case data
  B. Overview of Service Delivery Systems
    1. Types of settings
    2. Types of services offered
    3. Disciplines represented
  C. Preparation for visits
    1. Format for recording observations at on-site visits
    2. Review of specific organizational data
    3. Contact person and personnel to be observed
    4. Previsit data sheets

II On-Site Observations
- A. Tour of Physical Facilities (on rotation basis)
    - 1. Low Vision clinics (WFVRC/Elwyn/Wills Eye)
    - 2. Schools
        - a. Residential (Overbrook/Royer Greaves/Elwyn)
        - b. Public (Montgomery or Bucks Intermediate Units/St. Lucy Day School/Embreeville
    - 3. Rehabilitation Settings (Nevil/Elwyn/BVS Agencies)
    - 4. Resource Agencies (Library for the Blind/AFB/PA Materials Center for the Visually Handicapped)
- B. Observational Areas (for exploration and data gathering)
    - 1. Evaluation (clinical, rehabilitation, educational)
    - 2. Training (mobility, with aids, classroom/rehabilitation teaching)
    - 3. Staffings (multidisciplinary/IEP/IWPP, etc.)
    - 4. Specialty Services (large print, radio services, non-optical aids etc.)

III. Follow-Up
- A. Group presentations and discussions on observations
- B. Completion and exchange of resource files

Competencies: (Student will be able to...)

I.A.1. Describe the major techniques for observing the service delivery process including observations related to the interactions between low vision individuals and the service providers.

I.A.2. Differentiate among subjective, objective, analytical or planning data, collected during service delivery and the value of each.

I.A.3. Compare differing recording formats for data being gathered in varied service systems.

I.A.4. Present the significant data from a case record, to peers/instructors/supervisor(s) and discuss in terms of rehabilitation plans and/or follow-up.

I.B.1. Identify the type of settings in which low vision individuals receive services.

I.B.2. Describe the type of services found in each setting.
I.C. Anticipate and plan ways to learn from on-site visits.
II. & III. Prepare for, present, and discuss observations.
III.B. Develop a viable resource file.

Learning Activities:

1. Presentations by representatives of service delivery settings, instructors, and/or students.

2. Tours of 5-6 different settings (in pairs and/or a group) to view the service delivery process at each site.

3. Develop a resource file on each site visited using content of presentations, organizational literature reviews and touring information.

4. Review 2 unidentified case records at each site.

5. Monitor low vision exam via videotape.

6. Observe staffings and discuss with peers at biweekly group meetings.

7. Observe evaluation methods and report on these in biweekly group meetings.

8. Same with training observations.

9. Same with specialty services.

10. Present a case report to the group and discuss the rehabilitation potential (or planning) strategies observed or anticipated.

11. Spend a day with a Rehabilitation Teacher or Orientation and Mobility Specialist at an agency, or visiting homes.

Suggested Resources:

American Foundation for the Blind, Directory of Agencies Serving the Visually Handicapped in the U.S., New York: AFB, 1978.

Beegle C.W. and Brandt, R.M., Observational Method in the Classroom, VA: Association Supervision, 1973.

Cohen, D.H. and Stern, V., Observing and Recording Behavior of Young Children, New York: Teachers College Press, 1978.

Irwin, D. and Bushnell, M., Observational Strategies for Child Study. New York: Holt, Rinehart and Winston, 1980.

National Accreditation Council, Guidelines for Schools, Agencies, Clinics, etc.

Sackett, G.P., Observing Behavior, Vol. 1 and 2, Maryland: University Park Press, 1977.

Sprague, W.D., Low Vision: Its Impact on an agency. Journal of Visual Impairment and Blindness, May 1977, 71 (5), 197-202.

Brochures, annual reports and other visual or audio material of each agency visited. (see listing of sites to be used that follows).

Observation Sites:

Clinics:

- William Feinbloom Vision Rehabilitation Center, Pennsylvania College of Optometry, 1201 W. Spencer Avenue, Philadelphia, PA 19141.

- Elwyn Institute, Low Vision Clinic,
  4017 Ludlow Street, Philadelphia, PA 19104.

- Wills Eye Hospital,
  9th and Walnut Street, Philadelphia, PA 19107.

Schools:

- Intermediate Units - Montgomery County
  1650-B W. Main Street, Norristown, PA 19401.

- Intermediate Unit - Bucks County
  Cross Keys Building, Rts. 611 and 313, Doylestown, PA 18901

- St. Lucy's Day School,
  929 S. Farragut Street, Philadelphia, PA 19143

- Overbrook School for the Blind,
  64th and Malvern, Philadelphia, PA 19151

- Roger Greaves School for the Blind,
  118 South Valley Road, Paoli, PA 19301

Rehabilitation Agencies Facilities:

- Blindness and Visual Services,
  Philadelphia District Office
  1327 Hamilton Street, Philadelphia, PA 19123

- Blindness and Visual Services,
  Central Office
  P. O. Box 2675, Philadelphia, PA 17105

- Blindness and Visual Services,
  Wilkes-Barre District Office
  96 N. Pennsylvania Avenue, Wilkes-Barre, PA 18701

- Nevil Institute for Rehabilitation and Service,
  919 Walnut Street, Room 400, Philadelphia, PA 19107

- Elwyn Institute, Elwyn, PA 19063

Multiservice Resources:

- American Foundation for the Blind,
  15 West 16th Street, New York, NY 10011

- Library for the Blind and Physically Handicapped,
  919 Walnut Street, Phildelphia, PA 19107

- Pennsylvania Materials Center for the Visually Handicapped,
  4400 Franklin Street, Harrisburg, PA 17111

FUNCTIONAL IMPLICATIONS OF OPTICAL PRINCIPLES .

Catalog Description:

A study of optics and optical principles of the eye and optical aids. Topics include theories of light, properties of refractive and reflective surfaces, refractive errors and their correction, the eye as an optical instrument and optics as it relates to magnification and low vision optical aids. Practical application of optical theory to lenses, low vision and ocular systems will be stressed.

Lecture hrs./wk. - 3
Lecture hrs./wk. - 1

Topical Outline:

I. Nature of Light
    A. Composition of light
    B. Measurement of light
    C. Refraction at a plane surface
    D. Reflection at a plane surface
    E. Dispersion

II. Effects of light passing through an Index/Refractive surfaces
    A. Structure of lens
    B. Measurement of lenses
    C. Refraction at a curved surface (positive and negative lenses)
    D. Introduction to mirrors
    E. Prisms

III. Lens Systems
    A. Cylindrical lenses
    B. Aberration of lenses
    C. Thin lenses
    D. Thick lenses

IV. Opticals Components of the Static Normal Eye
  A. General Principles
    1. Use of the model eyes (Schematic Eye)
    2. Visual size (Focal Points)
  B. How an image is formed (visual pathway)

V. Optical Components of the Dynamic Eye
  A. Vergences (convergence, divergence)
  B. Accommodation/pupil size
  C. Presbyopia and its correction
  D. Optics of binocular vision

VI. Refractive Errors of the Normal Eye
  A. Myopia
  B. Hyperopia
  C. Astigmatism
  D. Correction of ametropia

VII. Theories of Magnification
  A. Relative size magnification
  B. Angular magnification
  C. Relative distance
  D. Projection magnification
  E. Minification

VIII. Functional Application of Optics of Low Vision Aids
  A. Microscopes
    1. Simple
    2. Compound
    3. Focal distance
    4. Magnification formula
    5. Field of view
    6. Lens form
  B. Magnifiers
    1. Hand-held
    2. Stand

    3. Focal distance
    4. Magnification
  C. Telescopes
    1. Galilean
    2. Astronomical
    3. Magnification
    4. Field of view
    5. Aberrations
    6. Contact lens telescopes
  D. Telemicroscopes
    1. Magnification
    2. Focal distance
  E. Projection Magnifiers
    1. Magnification
    2. Optical projection
    3. Electronic projection
  F. Field Enhancers
    A. Reverse telescopes
    B. Fresnel Prisms
    C. Cylindrical Lens
    D. High minus - minification
    E. Distortions of field enhancement systems

Competencies: (Students will be able to...)

I.A. Describe the electromagnetic wave and corpuscular theories.

I.B. Name the three ways electromagnetic waves are measured and the mathematical relationship between them.

I.C. Discuss the principles of refraction and refractive indices.

I.D. Draw a ray diagram illustrating image formation by a plane mirror given the dimensions needed.

I.E. Explain dispersion of light through glass.

II.A. Describe the focusing of light through a lens.

II.B. Measure focal lengths, and dioptric power of various lenses.

II.C. Explain the properties of positive and negative lenses.

II.D. Draw ray diagrams illustrating both a real and virtual image formation by a plane mirror.

II.E. Analyze the path that a light ray takes as it traverses a prism. An understanding of the relationships between the angle of incidence, angles of refraction, the apex angles, the index of refraction and the angular deviation caused by the prism should be demonstrated.

III.A. Find the position, length and direction of the line focus, given the parameters of a cylinder and a point source.

III.B. Explain clearly the term chromatic aberration and tell what the effect is on an image.

III.C. State the relationship between the power of a thin lens and the primary and secondary focal lengths. Be able to draw ray diagrams illustrating the significance of these points for both positive and negative lenses.

III.D. Calculate distance and size of the image for any given object given the parameters of a certain thick lens system.

IV.A.1. Name the power and focal points of the model eye, given the theory of the schematic eye.

IV.A.2. Name the optical components of the human eye and their average dimensions.

IV.B. Describe the visual pathway from object to image in the human eye.

V.A. Explain the mechanisms of vergences in the human eye.

V.B. Describe the process of accommodation and determine the amount of accommodation needed to see an object clearly given the distance from which the object is viewed.

V.C. Explain presbyopia and describe two methods of determining a presbyopic correction.

V.D. Name three tests which determine binocularity of vision.

VI.A.-C. Describe the refractive errors: myopia, hyperopia and astigmatism and diagram the focusing of light through these refractive conditions, given the parameters of those eyes.

VI.D. Determine the spectacle correction needed to correct the preceeding ametropias given the specifications needed.

VII.A.-D. List and describe the four classifications of magnification presented in lecture.

VII.E. Identify the uses of minification systems.

VIII.A. Calculate the magnification of specific low vision optical systems.

VIII.B. Describe the functional properties (pros and cons) for specific microscopic, telescopic, telemicroscopic magnifiers, projection and field enhancement systems, as they are related to performance of a task given a specific objective.

VIII.C. Select those classifications of aids which might be appropriate, given a hypothetical patient (and/or situation).

Learning Activities:

1. Develop an experiment to show that light travels in approximately straight lines.

2. Perform an experiment on the optical bench in lab to demonstate Snell's Law of Refraction.

3. Show how by using two plane mirrors, one in front of the other, a person can see the image of the back of his head. Trace the path of light from the back of his head to his eye and show clearly where the image is formed.

4. Using light box (ray box) demonstrate convergence, divergence, image/ object distance using various positive and negative lenses.

5. Deduce the relation between object distance, image distance and focal length of a spherical mirror, directly from the laws of refration. Describe how the focal lengths of a convex mirror may be determined experimentally.

6. Observe a point source with a maddox rod placed over one eye.

7. A lamp and screen are a certain distance apart, and various power lenses are place between them. Find where a specific lens must be placed in order to give a sharp image.

8. Using a ray box, demonstate image/object distances of various thick lens systems.

9. Measure the parameters of the components of the schematic eye.

10. Demonstrate the optical (refractive) capabilities of the various parts of the schematic eye.

11. Simulate presbyopia with cycloplegia and measure the correction needed to read at various distances.
12. Determine binocularity of vision using randot test, red lens test and worth 4-dot while wearing prisms to create binocular vision problems.

13. Students will wear contact lenses of varying powers to simulate myopia, hyperopia and astigmatism.

14. Demonstate magnification and minification principles using the optical bench.

15. Compare hand held magnifiers, stand magnifiers and microscopes of the same power while performing the following tasks: reading a magazine, looking up a number in the telephone book, and writing 3 sentences.

16. Compare field of view of the galilean versus the astronomical telescope.

17. While wearing telescopes of varying powers, compare the magnification of objects, field of view and effects of various lighting situations.

18. Using telescopes of varying powers and field of view, scan the room and locate assigned targets. Repeat this in an unbalanced position.

19. Read assigned paragraphs unaided, then read similar printed paragraphs with a 6x bioptic with a + 8.00 D reading cap and a 12 x microscope (total magnification = 12 x).

20. With a 6x telescope, determine reading caps needed to see specific materials (books, music, deck of cards) at various distances.

21. Students will participate in demonstration of a CCTV system.

22. Compare reverse telescopes, fresnel prisms, cylindrical lens, high minus lens for field of view, distortion, and walk a predetermined route (obstacle course).

References:

1. American Optical Programmed Series Books 1-4: Basic optical concepts, lenses, prisms and mirrors, the human eye, normal and abnormal vision, Southbridge, MA: American Optical Association, 1979

2. Chalkey, T., Yours eyes. Springfield, IL: Charles C. Thomas, 1974.

3. Faye, E., Clinical low vision, Boston, MA: Little and Brown, 1976.

4. Faye, E. and Hood, C., Low vision. Springfield, IL: Charles C. Thomas, 1975.

5. Fincham, W.H. and Freeman, M.H., Optics (8th ed.) London: Butterworths, 1978.

6. Fondu, G., Management of the patient with subnormal vision. St. Louis, MO: e.v., Mosby Co., 1965.

7. Goldstein, D., Optics for optometrists, Philadelphia, PA: P.C.O. Press, 1971.

8. Gregg, J. and Heath, G., The eye and sight, Boston, MA: D.C. Health and Co., 1964.

9. Gregory, R.L., Eye and brain - The psychology of seeing, New York-Toronto: Mebran - Hill, 1976.

10. Mehr, E. and Freid, A., Low vision care, Chicago, IL: The Professional Press, 1975.

RESEARCH II

Catalog Description:

Introduction to the basic mechanics of statistics (parametric and non-parametric as well as problematic, decision theory, reliability and validity) will be covered in this course. Emphasis will be placed on the application of these techniques to the field of low vision research. Through the study of both classical and quasi-experimental research methods, the student will be exposed to a variety of traditional and innovative approaches to research. The culmination of the research courses will be a student initiated research proposal related to low vision which the student will design, write and present.

Lecture hrs./wk. - 3
Lab hrs./wk. - 1

Topical Outline:

I. Statistics
    A. Quantitative Aspects
    B. Number Systems
    C. Basic parametric and non-parametric techniques
    D. Probability and Distributions
    E. Decision theory
    F. Correlation Techniques
    G. Graphic Analysis
    H. Reliability
    I. Validity

II. Direct and Indirect Measurement of Behavior

III. Alternative Research Methods
    A. Types of Methods
        1. Single Subject Design
        2. Between Subject Design
        3. Correlation Study

        4. Survey Design
        5. Naturalistic Observation
    B. Selection of Most Appropriate Method

IV. Writing a Scientific Paper
    A. Designing and Defending a Research Proposal
    B. Writing results and discussion after synthesizing hypothetical data

Competencies: (The student will be able to...)

I.A.1. Identify scales as nominal, ordinal, interval and ratio, given ten metrics from research papers. Select, calculate and choose the appropriate measures of central tendency (mode, median, arithmetic mean) and dispersion (range and standard deviation). Using a statistical calculator and given five data sets with appropriate descriptions of the metrics and conditions involved, plot the frequency distributions, estimate percentiles, and estimate the probability that certain scores will occur with the above data. Compute a correlation and indicate the probability that such a correlation is non-random. Given two sets of data and a description of the metrics, identify the appropriate data set from three graphically presented alternative data sets. Produce graphic representations of the data given an appropriate data set.

II.A. Choose and measure an observable behavior in the low vision individual.

II.B. Provide documentation of measureable changes in the low vision individual's behavior or function which accrue from the application of a given treatment or device.

III. Given a set of 10 hypothetical situations which include
    (1) Content area,
    (2) questions to be addressed, and
    (3) limitations of the setting and any other external controls, design a research protocol which maximizes the efficiency and reliability of data collection for answering the hypothesis.

IV.A. Design and defend a research proposal to be presented in classroom colloquium format.

IV.B. Synthesize and analyze hypothetical data, and then write Results and Discussion sections for the instructor's approval.

Learning Activities:

1. The student will perform all required statistical analyses on a statistical calculator.

2. The student will become familiar with EDA software on an Apple Microcomputer.

3. Given instructional presentation of hypothetical research protocols the students will respond in writing, identifying quantifiable behavioral changes.

4. The student will observe in a clinical setting and identify potentially quantifiable aspects of a situation.

5. Once quantifiable variables have been defined, the student will teach another student how to measure the variable and they will measure the variable simultaneously and independently on a given number of low vision individuals. The student will determine, reliability of collected data.

6. Given a report of an "untestable" low vision individual, the student will attempt to identify a quantifiable behavior.

7. The student will read several journal articles representing different research methods and discuss them with research experts skilled in the different methodologies.

8. The student will prepare a Low Vision Bibliographical database based on the above readings and discussions.

9. The student will attend a workshop given by an editor of a reference journal on writing a scientific paper.

References:

1. Campbell and Stanley, Experimental and quasi-experimental designs for research. In N.L. Gate (ed.) Handbook of research on teaching, Skokie, IL: Rand McNally, 1963.

2. Kerlinger, F.N., Foundations of behavioral research. New York: Hoh, Rinehart and Winston, 1964.

3. Kirchner, C. and Lowman, C., Sources of Variation in the Estimated Prevalence of Visual Loss. Jour. Vis. Impair. and Blind. 1978, 72 (8), 329-333.

4. Kirchner, C. and Lowman, C., "Visual Handicap: Statistical Data on a Social Process". Journ. Vis. Impair. and Blind. 1978, 72 (10), 329-333.

5. Leinhardt, G. and Leinhardt, S., Exploratory data analysis, New tools for the analysis of empirical data. IN: D.C. Berlinder (ed.), Rev. Res. Ed. (Vol. 8). Washington, DC: American Educational Research Assoc., 1980.

6. Minimum, E., Statistical Reasoning in Psychology and Education (2nd ed.), New York: J. Wiley and sons, 1978.

7. Peterson, R., Lowman, C. and Kirchner, C., Statistical Brief #2, Visual Handicap, Statistical Data on a Social Process. Jour. Vis. Impair. and Blind. 1978, 72 (4) 419-421.

8. Runyon J. and Haber, Foundations of Behavioral Statistics (4th ed.) Reading, MA: Addison-Wesley, 1980.

9. Tukey, J.W., Exploratory data analysis, Reading, MA: Addison-Wesley Publishing Company, 1977.

10. Van Hasselt, V.B. and Hersen, M., Application of a single-case design to research with visually impaired individuals, Journal of Visual Impairment and Blindness, November 1981, 75 (9), 359-67.

11. Vellman, P. and Hoaglin, D., Applications, Basis and Computing of Exploratory Data Analysis, Boston: Duxbury Press, 1981.

12. Warren, D., Blindness in Early Childhood, New York: American Foundation for the Blind, 1977.

VISUAL HABILITATION AND REHABILITATION OF THE LOW VISION INDIVIDUAL

Catalog Description:

Presents the critical components of improving visual efficiency in low vision individuals from the perspective of a variety of disciplines. Stresses training the utilization of low vision in the performance of daily tasks at home, work, recreation and while traveling. Integrates vision stimulation, training with optical aids, and the use and modification of environmental cues to increase visual efficiency. This course incorporates the interdisciplinary development of individualized educational and rehabilitation plans, task analysis and the utilization of local and national resources in a holistic approach to the low vision individual.

Lecture hrs./wk. - 2
Lab hrs./wk. - 4

Topical Outline:

I. Development of Individualized Educational and Rehabilitation Plans
    A. Components of individualized plans
    B. Behavioral objectives
    C. Task and component analysis
    D. Development of intervention strategies based on assessments and evaluations

II. Methods of Vision Utilization and Stimulation Without Optical Aids
    A. Unaided visual skills
        1. Visual sensation activities
        2. Visual motor activities
        3. Higher level visual perceptual skills and activities
    B. Near, intermediate and distance visual tasks
        1. Static activities
        2. Dynamic activities
    C. Environmental visual cues
        1. Home, work, recreational and travel settings
        2. Interpretation of cues

        3. Environmental modifications
    D. Methods of Vision Utilization and Stimulation With Optical Aids
        1. Training with near, intermediate and distance optical aids
            a. Task-oriented techniques
            b. Age-specific techniques

III. Human Relations Skills In Teaching
    A. Communication skills
    B. Application of learning principles
    C. Teaching methods: Pedagogical and androgogical

IV. The Consumers Role
    A. The habilitation and rehabilitation processes
    B. Client advocacy

V. Utilization of Local and National Resources
    A. Professional organizations
    B. Government organizations
    C. Service agencies
    D. Consumer groups and coalitions

Competencies: (Students will be able to...)

I.A. Identify the major components of individualized educational and rehabilitation plans.

I.B.-C. Analyze the components of a desired task or series of tasks and list sequentially behavioral objectives necessary to complete such task(s).

I.D. Utilizing information from functional vision evaluations, develop strategies for remediation of specific problem caused by visual impairment.

II.A. Identify major stages in sequence of visual development.

II.A.2. Design a program of vision stimulation pertinent to the low vision individual's age and level of cognitive and sensory development.

II.B. Given a specific visual task, list materials and plan a developmental series of activities necessary for the completion of the task.

II.C. List several non-optical aids helpful at home, in school work and in recreation; identify the advantages and disadvantages of each of these aids.

II.D.1. Identify and design environmental adaptions that will enhance a low vision person's functional performance in home, work, school and recreational settings.

II.D.2. Visually analyze a given environment and design adaptive techniques for the low vision individual to maximize functioning.

II.E.1. List the main categories of optical aids and identify the advantages and disadvantages of near, intermediate and distance aids.

II.E.2. Design a training protocol, given an optical aid and specific task for a child, adult, elderly individual and multiply handicapped low vision person.

II.E.3. Evaluate the impact of an optical aid on a low vision individual's performance of a given task.

III.A. Identify critical factors in effective communication.

III.B.-C. Identify and differentiate learning principles involved in pedagogical and androgogical theories.

III.D. Identify and describe psychosocial factors which affect the utilization of vision (i.e., family, peers, helping professionals, socio-economic status, etc.).

IV.A. Describe essential qualities for effective human relationship in the habilitation and rehabilitation processes (i.e., empathy, warmth, genuineness)

IV.B. Describe and demonstate a variety of methods that will facilitate or promote the involvement of the low vision individual in his/her own rehabilitation process.

V. Identify local, regional and national resources which will facilitate and enhance the habilitation and rehabilitation processes.

Learning Activities:

1. Design an individualized educational plan including a vision stimulation program for a low vision child with no additional handicaps as well as for one with multiple handicaps.

2. Design an individualized rehabilitation plan for a low vision individual stressing the utilization of optical aids in a number of settings.

3. When presented with a minimum of two visual tasks in settings such as homework, schoolwork, etc., the student will analyze the tasks into discrete behavioral components so they respond to the learning needs of low vision individuals: with limited apatial concepts; unfamiliar with the expected task; at different age levels.

4. Read and analyze evaluations from various professionals and design a beginning training plan for a low vision individual in each of the following situations - learning to use: a 10x microscope; 6x telescope; 30 diopter fresnel prism.

5. Select at least two different indoor and outdoor environments and conduct a functional evaluation of the environments. Then teach a low vision individual how to interpret, utilize and modify visual cues to increase his or her visual efficiency and performance in each environment.

6. Role play the instruction of a low vision individual in the use of at lease one near, intermediate and distance optical aid.

7. While wearing visual distortion systems, students will perform a variety of near and distance tasks using hands-on experiences with optical aids.

8. Instruct at least two low vision individuals in the use of optical aids. Instruction should be centered around activities specific to the discipline of the graduate student (e.g., special educator with reading task, mobility instructor with travel task, etc.).

9. Each student prepares a 5 page paper on a specific optical aid and suggestions for instruction in its use. Each student gives an oral presentation to the class as well as a copy of his or her paper, so that all students will have a compendium of optical aids and teaching suggestions.

10. Role play doctor/patient/instructor roles with a variety of common problems experienced in communications. Each individual is given a

different personal agenda for the meeting. The students role playing as well as those observing them constructively analyze any communication problems.

11. Role play the development of a hypothetical contract with a child, adult and elderly low vision individual.

12. Compile resource information on consumer groups and coalitions, and their purposes and services, suitable for distribution to the low vision population.

13. Design a pamphlet describing low vision and the types of services available for low vision individuals.

14. Attend at least 2 meetings of consumer advocacy groups.

15. Each student completes a local regional and national resource file in a selected area of service to low vision individuals. Students have files with each other.

References:

1. Backman, O. and Inde, L. Low vision training, Kundtjanst, Sweden: Liberhermonds, 1979.

2. Barraga, N.C. Teacher's guide for the development of visual learning abilities and utilization of low vision, Louisville, KY: American Printing House for the Blind, 1970.

3. Barraga, N.C. "Utilization of Low Vision in Adults Who are Severely Visually Handicapped." The New Outlook, 70, 5, pp. 171-181, May 1976.

4. Barraga, N.C. Visual handicaps and learning: A developmental approach. Belmont, CA: Wadsworth Publishing Co. 1976.

5. Barraga, N.C. and Morris, J. Program to develop efficiency in visual functioning. Louisville, KY: American Printing House for the Blind, 1980.

6. Bikson, T.H. and Bikson, T.K. Functional problems of the visually impaired: A research approach, Santa Monica, CA: The Rand Corp., 1981.

7. Brilliant, R. and Graf, F. "Enlarged Field of View With a Reverse Contact Lens Telescope", Rev. Optom., 115, 9, pp. 30, 1978.

8. Corn, A.L. "Optical Aids in the Classroom", Ed. Vis. Hand., 12, 4 pp. 114-124, Winter 1980-1981.

9. Collins, M.E. and Barraga, N.C. "Development of Efficiency in Visual Functioning: An Evaluation Process", Journ. Vis. Impair. and Blindness, 74, 3, pp. 93-96, March 1980.

10. Faye, E. Clinical low vision, Boston, MA: Little, Brown and Co., pp. 248-252, 1976.

11. Finn, W., Gadbaw, et al. "Increased Field Accessibility Through Prismatically Displaced Images". New Outlook for the Blind, 69, 1975.

12. Genensky, S.M. and others, Visual environmental adaptation problems of the partially sighted: Final report. Santa Monica, CA: Santa Monica Hospital Medical Center, January 1979.

13. Goodrich, G. and Quillman, R.D. "Training Eccentric Viewing", Visual Impair. and Blindness., 71, 9 pp. 377-381, November 1977.

14. Held, R. Image, object and illusion: Readings from scientific american, San Francisco: W.H. Freeman and Co., 1974.

15. Hoeft, W.W. "The Management of Visual Field Defects Through Low Vision Aids". Jour. Amer. Optom. Assoc. 51, 9, pp. 863-864, 1980.

16. Hoover, R.E. "Visual Efficiency as a Criterion of Service Needs". Research Bulletin, New York: AFB, 3, pp. 116-119, August 1963.

17. Jose, R.T. and Smith, A.J. "Increasing Peripheral Field Awareness with Fresnel Prisms", Optom. Jour. and Review Optom., 113, 12, pp. 33-37, 1976.

18. Kelleher, D.K. "Orientation to Low Vision Aids". Visual Impair. and Blindness, 73, 5, pp. 161-166, 1979.

19. Mehr, E.B. and Fried, A. Low vision care. Chicago: The Professional Press, Inc., pp. 127-133, 1975.

20. Moore, S. "Stimulating Visual Functioning in Preacademic Visually Impaired Students", PRISE Reporter, 12, pp. 1-2, April 1981.

21. Morris, O.F. "Teacher Assessment of Visual Functioning". Ed. Vis. Hand., 13, 2, pp. 42-50, Summer 1981.

22. Muniz, J.V. "The Development of Specific Visual Skills in Low Functioning Children Who are Hearing Impaired and Well as Visually Impaired"., Ed. Vis. Hand., 12, 3, pp. 79-82, Fall 1980.

23. O'Brien, R. Vision stimulation - A program of instruction designed to stimulate the use of residual vision in children with low vision. Bulletin #227, Rockville, MD: Montgomery County Board of Education 1969.

24. Quillman, R.D. and Goodrich, G.L. "Eccentric Viewing Training: A Case Report", Long Cane News, 10, 2, pp. 9-14, 1977.

25. Sloan, L.L. Recommended aids for the partially sighted. New York: National Society to Prevent Blindness, Inc., 1971.

26. Smith, A.J. and Cote, K. Look at me: A resource manual for the development of residual vision in multiply impaired children, Philadelphia, PA: PCO Press, 1982.

27. Smith, A.J. and Beliveau, M. (eds.) The interdisciplinary approach to low vision rehabilitation, National Training Workshop in Low Vision (Chicago) Stillwater: Oklahoma Clearinghouse, 1980.

28. Smith, A.J. and Geruschat, D. "Training Protocol for the Utilization of Fresnel Prisms on Persons with Peripheral Field Defects", (In Press) PCO, 1979.

29. Sicurella, V. "Color Contrast as an Aid for Visually Impaired Persons". Journ. Vis. Impair. and Blindness, June 1977.

30. Watson, G. and Jose, R. "A Training Sequence for Low Vision Patients", Journ. Amer. Optom. Assoc. 47, 11, pp. 1407-1414, 1976.

31. When it's hard to see. Office of Special Education, 6037 Central Avenue, Capital Heights, Maryland 20027.

32. Wiener, W. and Vopata, A. "Suggested Curriculum for Distance Vision Training with Optical Aids. Journ. Vis. Impair. and Blindness, 74, 2, pp. 49-56, February 1980.

PSYCHOSOCIAL IMPLICATIONS OF VISUAL IMPAIRMENT

Catalog Description:

Overviews the psychosocial factors associated with visual losses and changes in visual functioning. Places emphasis on skill development in recognition of psychosocial factors affecting vision rehabilitation and in assisting individuals with basic adjustments. Identifies referral sources for extensive psychosocial adjustment services. Reviews attitudes affecting the spectrum of low vision care. Emphasizes interdisciplinary approach to vision rehabilitation.

Lecture hrs./wk. - 3
Lab hrs./wk. - 1

Topical Outline:

I. Psychosocial Concepts
    A. Self Concept, Self Esteem, Self Confidence
    B. Development of the "whole person"
    C. Significant Others/Referent Groups
    D. Independence vs. dependence (including locus of control issues)
    E. Other

III. Types of Losses
    A. Visual (review)
    B. Psychosocial (includes self esteem, status, friends/spouses)
    C. Economic/Vocational (includes loss of income/job)
    D. Mobility/Communication
    E. Avocations
    F. Other

IV. Reactions and Factors Affecting These Reactions
    A. Consumer
        1. Type of reactions (e.g., fear, withdrawal, guilt, denial, depression)
        2. Factors affecting reactions (e.g. age of onset, previous coping styles, timing of services, type of eye condition)

- B. Family
  - 1. Type of reactions (e.g. overprotective, guilt, fear, threatened, misinterpretation of visual behavior)
  - 2. Factors affecting reactions (e.g. roles and relationship status, previous family coping styles, economic circumstances, beliefs, burdened status or visual problems)
- C. Professional
  - 1. Type of reactions (e.g. stereotype, foster dependence, avoidance, ignorance, fear of inappropriate actions, compartmentalization action)
  - 2. Factors affecting reactions (e.g. interdisciplinary attitude, knowledge of low vision and its effects, biases, fears)
- D. Community/Society
  - 1. Type of reactions (e.g. rejection, avoidance, distrust, fear of contagion, uncertainty regarding how to help).
  - 2. Factors affecting reactions (e.g. experience with disabled individuals, access to information on disabilities, work ethic)

IV. Communication Skills
- A. Rapport building techniques
- B. Active listening to verbal and nonverbal communications
- C. Demonstrating understanding (e.g. summarizing or interpreting)
- D. Information exchange and recording

V. Identifying and Assessing Consumer's Psychosocial Needs
- A. Acceptance of visual loss and its impact
- B. Realistic expectations regarding eye condition and its stabilization or rehabilitation
- C. Understanding of types of services and other resources available

VI. Contracting
- A. Clarifying expectations (including roles and responsibilities)
- B. Written individual plan (include flexibility and tentative states)
- C. Recognizing client's right to self-determination
- D. Establishing partnership

VII. Processes for initiating change(s)
   A. Reflective listening
   B. Confrontation
   C. Self-help groups (peers, volunteers, family, other)
   D. Educating client
   E. Provisions of resources/services, making referrals
   F. Creation of significant emotional events

VIII. Practical Applications
   A. Conduct a rapport-building and information-exchange-oriented interview
   B. Identify and assess psychosocial needs (in several data sets)
   C. Contract with consumers (in role play situations)

Competencies: (The student will be able to...)

I. Discuss the psychosocial factors in an individual's life which contribute to adjustments and problems associated with vision loss.

II. List and explain the types of losses associated with changes in visual functioning.

III.A.-D. State typical reactions of consumers, family members, professionals and community members to visual loss and factors affecting such change.

IV. Demonstrate knowledge of communication skills needed in establishing a meaningful relationship between service providers and consumers (including exchange of relevant data needed for decision making).

V. Describe the signs of consumer acceptance of his/her visual loss.

V.B. Identify typical statements used which indicate realistic expectations regarding eye conditions.

V.C. Describe the signs of consumer understanding of services and resources available.

VI. Define "contract" or "plan", describe typical content areas, and state the roles of the consumer and service providers in preparing the contract.

VII. Explain several ways to assist consumers in making psychosocial adjustments leading to rehabilitation.

VIII. Interview, assess psychosocial needs, and contract or plan with the consumer for rehabilitation.

Learning Activities:

1. Lecture, directed readings and discussions on definitions and issues in low vision which can affect psychosocial adjustment.

2. Lectures, discussions, and analysis of case histories to determine self concepts, levels of dependency, development of the whole person, impact of significant others including referent groups.

3. Consumer representatives present stories of their early experiences with visual losses and its impact.

4. Case studies and/or family presentations on reactions to vision loss in the family.

5. Review of latest research on professional attitudes toward visually impaired persons.

6. Interviews or survey of selected community members regarding attitudes toward the disabled.

7. Lectures, demonstration, practice of each communication skill, role playing groups of skills needed for communicating in interviews, assessments and service delivery (to minimize psychological problems).

8. Behavior modeling, videotaped case reviews and/or role plays to demonstrate and develop skill in identifying and assessing consumers psychosocial needs.

9. Review sample contracts/plans and then role play development of contracts or plans for services jointly between consumers and service providers using a data set.

10. Discuss, demonstrate and practice using data sets the steps and statements which can be used to prompt change.

11. Role play and critique conducting rapport building and information-exchange-oriented interviews.

12. Using data sets of service providers/client dialogues, assess psychosocial needs.

13. Develop videotapes illustrating the influence of vision loss on behavior.

References:

1. Apple, M., Apple, L. and Blasch, D., Low Vision. In R. Welsh and B. Blasch (Eds.) Foundations of Orientation and Mobility. New York: American Foundation for the Blind, 1980.

2. Ault, C., The Marginal Man. (Unpublished Manuscript.) Western Blind Rehabilitation Center. Palo Alto, CA: Veterans Administration Hospital, 1976.

3. Carroll, T.J., Blindness: What it is, what it does, and how to live with tt. Boston, MA: Little, Brown and Co., 1961.

4. Cholden, L.A., A psychiatrist works with blindness. New York: American Foundation for the Blind, 1968.

5. Combs, A.W., Avila, D., and Purkey, W.W., Helping relationships: basic concepts for helping professionals. Boston, MA: Allyn and Bacon, 1971.

6. Criddle, R. Love is Not Blind. New York: W.W. Norton, 1953.

7. Cull, J. and Richard, H., Understanding disability for social and rehabilitation services, Springfield, IL: C.C. Thomas, 1973.

8. Danish, S.J. and Allen, L.H., Helping skills: A basic training program, New York: Behavioral Publications, 1973.

9. Egan, G., The skilled helper: A model for systematic helping and interpersonal relating, Monterey, CA: Brooks-Cole, 1975.

10. Finestone, S., The family in the rehabilitation of blind persons. In Feinstone, et al (eds.), Social casework and blindness. New York: American Foundation for the Blind, 1960.

11. Freedman, S., Family reactions to blindness and visual impairment. (Unpublished paper). Presented at the International Conference of the American Association of Workers for the Blind, Toronto, 1981.

12. Garnett, A., Interviewing: Its principles and methods. New York: Family Services of American Association, 1982.

13. Goffman, E., Stigma. Englewood Cliffs: Prentice Hall, Inc., 1963.

14. Glass, E., The social psychological adjustment to low residual vision. In Apple, L. and Apple, M. (eds.) Proceedings of the Low Vision Conference - Visual Abilities - Their Behavioral Assessment and PossibleMethods for Improvement in the Individual with Severe Visual Impairment. Washington, DC: U.S. Office of Education, 1970.

15. Gottlieb, W. and Stanley, J., Mutual goals and goal setting in casework. Social Casework, 1967, 47 (8), pp. 471-477.

16. Hallenback, P.A., Dogmatism and visual loss. New York: American Foundation for the Blind, 1967.

17. Hicks, S., Psychosocial and rehabilitation aspects of acquired visual handicap. Trans. Opthal. Social Work 1978, 98 252.

18. Holmes, H.H. and Rahe, R.H., The social readjustment rating scale. Journal of Psychosomatic Research, 1967, 11 213-218.

19. Krausz, S.L., Group psychotherapy with legally blind patients. Social Work Journal, 1980, 8, 37-49.

20. Kubler-Ross, E. On death and dying. New York: McMillan Co., Inc., 1969.

21. Kubler-Ross, E. Questions and answers on death and dying. New York: McMillan Co., Inc., 1974.

22. Lippit, G.L., Visualizing change: Model building and the change process. LaJolla, CA: University Associates, Inc., 1973.

23. Maluccio, A. and Marlow, W. The case for the contract. Social Work, 1974, 28-36.

24. McDonald, A.P., Jr. Internal-External locus of control: A promising rehabilitation variable. Journal of Counseling Psychology, 1971, 18 111-116.

25. Mehr, E.B. and Freid, A., Low Vision Care. Chicago, IL: Professional Press, 1975.

26. Mehr, H., Mehr, E. and Ault, L., Psychological aspects of low vision rehabilitation. American Journal of Optometry, 1970, 7, 605-612.

27. Petrich, J. and Holmes, T., Life changes and onset of illness. Medical Clinics of North America, 1977, 11 213-218.

28. Potok, Ordinary Daylight New York: Bantam, 1981.

29. Roessler, R., Psychosocial adjustment to disability, Maryland: University Park, 1978.

30. Welsh, R., Psychosocial dimensions. In R. Welsh and B. Blasch (Eds.) Foundations of orientation and mobility. New York: American Foundation for the Blind, 1980.

31. Welsh, R., The Use of Group Strategies with the Visually Impaired. In M. Seligman (ed.) Group Psychotherapy and Counseling with Special Populations. Baltimore: University Park Press, 1981.

32. Wright, B.A., Physical disability:A psychological approach, New York: Harper-Row, 1960.

PRACTICUM 2: OBSERVATION AND ANALYSIS

Catalog Description:

Provides opportunities and guidelines for observing, comparing and analyzing service delivery patterns in varied settings including diverse disciplines. Students will examine environmental modifications for the visually impaired. Comparisons will be made of the resources including optical and nonoptical aids used for enhancing visual efficiency. Techniques and materials for habilitation and rehabilitation of the visually impaired will be reviewed and analyzed.

Lecture hrs./wk. - 1
Lab hrs./wk. - 4

Topical Outline:

I. Comparing Service delivery patterns
    A. Standards
        1. National Accreditation Council
        2. Council for the Accreditation of Rehabilitation Facilities
        3. Other
    B. Observation Areas
        1. Accreditation status
        2. Range of services
        3. Case finding and referral sources status
        4. Administrative structure and philosophy
        5. Service outcomes
        6. Funding base
        7. Environmental accommodations for clients/students/patients
        8. Other
    C. Comparisons
        1. Identification of strengths and weaknesses in each
        2. Identify overlapping and/or missing services
        3. Recommend ideal pattern of service delivery for each type of setting.

II. Resource Applications
  A. Optical Aids
    1. Familiarization with uses
    2. Training techniques
    3. Issues involved in selection and uses of optical aids
    4. Sources
  B. Nonoptical Aids
    1. Familiarization with uses (applications being made)
    2. Sources

III. Environmental Modifications/Adaptations
  A. Environmental Considerations
    1. Spatial aspects
    2. Illumination/Contrast/Glare/Color
    3. Architectural accessibility
    4. Other
  B. Observations and Reports
    1. Overview of special accommodations made at each site visited
    2. Comparisons between sites by type of setting
    3. Recommendations for own setting from environmental observations

IV. Observing roles in serving low vision individuals
  A. Eye Care Specialist
  B. Rehabilitation Counselor/Placement Specialist
  C. Rehabilitation Teacher
  D. Mobility Instructor
  E. Teacher of the Visually Handicapped
  F. Administrator
  G. Consumer Advocate

V. Observing Current Research Efforts/Areas
  A. Field enhancement systems
  B. Eccentric Viewing
  C. Stress Reduction
  D. Illumination and Mobility
  E. Other

Competencies: (Student will be able to...)

I.A. State the types of standards applicable to service delivery systems.

I.B. Describe the essential components in a service delivery pattern.

I.C. Assess factors contributing to strengths, weaknesses, duplicated and missing services in low vision.

II.A. Describe the advantages and limitations involved in using optical aids.

II.B. Identify typical nonoptical aids and their uses.

III.A. State the types of modifications or adaptations that can be made to the environment to enhance vision use.

III.B. Recommend improvement areas to own setting.

IV.A-F. Illustrate the functions of one other discipline through a case report to other students and teachers.

V.A-E. Describe current research efforts in observation sites.

Learning Activities:

1. On-site visits to different service delivery sites for in-depth study.

2. Directed readings, lecture, and exercises related to established standards.

3. Review annual reports of several organizations and compare by components reflecting structure, outcome, philosophy, range of services, funding base, accreditation status, etc.

4. Observe the process of selecting optical aids.

5. Observe the process of training in the use of optical aids.

6. Role-play teaching in the use of optical aids or their selection.

7. Spend a day with a service provider in a different discipline from the student's.

8. Interview a researcher and observe one or more research activities.

9. Review summative evaluation literature on present research areas.

Resources: (See also Practicum I - Observation I)

- Unpublished listing of source of optical aids.
- Literature such as annual reports, brochures, statistical reports from sites being visited.
- Catalogs of aids from the American Foundation for the Blind.

Corn, A.L. Environmental Cues, The Interdisciplinary Approach to Low Vision Rehabilitation, (edited by Monica Beliveau and Audrey Smith), August 1980.

Corn, A.L. Optical aids in the classroom. Education of the Visually Handicapped, Winter, 1981, 12 (4), 114-121.

Sites: (See Practicum I - Observation I)

THE TEAM APPROACH TO LOW VISION

Catalog Description:

The development and processes of the team approach to providing low vision care will be explored. Roles and responsibilities of team members including the low vision individual as consumer will be discussed. The course will also cover the evaluation of team effectiveness.

Lecture hrs./wk. - 2
Lab hrs./wk. - 3

Topical Outline:

I. Review Philosophies and Definitions of Low Vision

II. The Education/Rehabilitation Process
  A. Services available to:
    1. infants
    2. children
    3. adolescents
    4. adults
    5. elderly adults
  B. Roles and Responsibilities of Professionals providing these services

III. Low Vision Service Delivery
  A. Service delivery models
  B. Characteristics, Roles and Responsibilities of Low Vision Professionals
  C. The low vision individual/family as consumer/team member

IV. Establishing a Low Vision Team

V. Team Management/Case Management
  A. Process
  B. Coordination
  C. Creative Problem Solving
  D. Dialogue

VI. Team Effectiveness

A. Establishing quality control

B. Evaluating Effectiveness

VII. Follow-Up and Follow-Through: The Cyclical Service

Competencies: (The student will be able to...)

I.A. Discuss several philosophies of low vision care.

I.B. List problems in defining low vision.

I.C. Provide definitions of low vision in several categories (i.e. legal, clinical, educational, functional, emotional).

II.A. Describe the educational and/or rehabilitational services available to: (1) infants; (2) children; (3) adolescents; (4) adults and (5) elderly adults.

II.B. Describe the characteristics, roles and responsibilities of professionals providing these services.

IV.A. Describe several service delivery models.

IV.B. Given a patient case history and set of objectives, list possible members of a low vision service delivery team and describe the role and responsibilities of each, naming the most appropriate team coordinator.

III.C.1. Outline the information that a low vision individual/family should receive from a low vision team, and appropriate questions the individual/family should ask during the process.

III.C.2. Given a low vision case history, explain the diagnosis, prognosis and treatment plan in terminology most appropriate for the understanding of the low vision individual/family.

IV. Describe the process for contacting possible low vision team members and providing funding for a low vision service most appropriate for his/her area.

V. Describe the most appropriate management and communication process for a given low vision case history.

VI.A. Describe several methods for establishing quality control for a low vision service.

VI.B. Describe several methods for evaluating effectiveness of a low vision service.

VII.A. List several reasons why a low vision individual would need to return for further low vision services.

VII.B. Describe several methods for insuring follow-up and follow-through with low vision individuals.

Learning Activities:

1. The student will interview the following professionals to obtain information on educational background and job responsibilities.
    a. educator
    b. mobility instructor
    c. ophthalmologist
    d. optician
    e. optometrist
    f. psychologist
    g. rehabilitation counselor
    h. rehabilitation teacher
    i. social worker

2. The student will interview members of a low vision team to obtain information on educational background and job responsibilities.

3. The student will role play the following scenarios:
    a. As a low vision team member during a patient staffing - discuss the diagnosis, prognosis and treatment plan.
    b. As a low vision team member relating diagnosis, prognosis and treatment plan to the low vision individual/family.
    c. As a low vision individual obtaining information from the low vision team.

4. The student will visit several low vision service sites and compare/contrast the various:
    a. Philosophies of low vision care.
    b. Team members; their roles and responsibilities.
    c. Physical plant/equipment, materials.

5. The student will write a paper on one of the following topics:
    a. Historical Perspective of Low Vision Service Delivery.
    b. Philosophy and Definition of Low Vision.
    c. Low Vision Service Delivery Models.
    d. Low Vision Quality Assurance.
    e. The Education/Rehabilitation Process.

REFERENCES:

1. Beliveau, M. and others, Low vision referrals - An interdisciplinary dialogue. In M. Beliveau and A.J. Smith (eds.) The interdisciplinary approach to low vision rehabilitation. Stillwater, OK: University of Oklahoma, 1981.

2. Bennett, F.C., The pediatrician and the interdisciplinary process. Exceptional Children, Jan., 1982, 48 (4), 306-14.

3. Brill, N., Team work: Working together in the human Services, Philadelphia, PA:, J.B. Lippincott, 1976.

4. Carroll, Rev. T.J., Blindness: What it is, what it does and how to live with it. Boston, MA: Little, Brown and Co., 1961.

5. Carter, K. and Carter, C., Itinerant Low Vision Services, New Outlook for the Blind, 1969.

6. Cohen, N.S. and Shapiro, J.L., Out of sight into vision. N.Y.A.B. 25th Annual Low Vision Symposium, Nov. 1978.

7. Corn, A. and Martinez, L., When you have a visually handicapped child in your classroom. Pamphlet, New York: American Foundation for the Blind, 1975.

8. Faye, E.E., Low vision service in an agency: Structure and philosophy. New Outlook for the Blind, June, 1975, 69 (6), 241-8.

9. Genensky, S. A functional classification system of the visually impaired to replace the legal definition of blindness. Amer. J. Optom., 1971, 48 (8), 631-42.

10. Goldenson, R.M., and others, Disability and rehabilitation handbook. New York: McGraw-Hill, 1978.

11. Golon, A.K. and Ducannis, A.J., Interdisciplinary health care team: A handbook. Rockville, MD: Aspen Systems, 1980.

12. Golon, A.K. and Ducannis, A.J., Interdisciplinary team: A handbook for the education of exceptional children. Rockville, MD: Aspen Systems, 1981.

13. Gottlieb, D. and Shorkey, C.A., Joann - Working together to help her see. DVH Newsletter, Winter, 1978, 22 (3), 3,7,14-15.

14. Harris, S. and others, A training program for interdisciplinary health care teams. Health & Social Work, May 1978, 3 (2) 36-53.

15. Hoehne, C.W., Cull, J.G. and Hardy, R.E. (eds.), Ophthalmological considerations in the rehabilitation of the blind. Springfield, IL: Charles C. Thomas, 1980.

16. Horwitz, J., Team practice and the specialist: An introduction to interdisciplinary teamwork. Springfield, Il.: Charles C. Thomas Publishers 1970.

17. Hoyt, S., Rehabilitation teaching and the low vision client", Braille Forum, June, 1978.

18. Jose, R. and Springer, D., Optical aids: An interdisciplinary Approach. The New Outlook for the Blind, Jan. 1973.

19. Kelleher, D., The roles of the teachers, counselor and other professionals in the low vision rehabilitation process. Paper presented at the annual meeting of the American Association of Workers of the Blind, Atlanta, GA: 1975.

20. Koestler, F.A. *The unseen minority: A social history of blindness in the United States.* New York: American Foundation for the Blind, 1976.

21. Mehr, E.B. and Fried, A.N., *Low vision care*. Chicago, IL: The Professional Press, 1975.

22. Nagi, S.Z., *Disability and rehabilitation: Legal, clinical and self concepts measurement*. Columbus, OH: Ohio State University Press, 1970.

23. Riley, L.H., Low vision statistics. *Amer. J. Optom*. 1969, *40* (8), 820-827.

24. Riley, L.H., A symposium on the rehabilitation of the partially sighted. *Amer J. Optom*., 1970 *47* (8), 585-7.

25. Rosenbloom, A., Prognostic factors in the visual rehabilitation of aging patients. *The New Outlook for the Blind*, March 1974.

26. Weiss, S. and Moore, E.K., Low vision rehabilitation center serves a wide area. *Sight Saving Review*, Winter, 1960, *30* (1): 209-211.

MANAGEMENT OF COMPREHENSIVE LOW VISION SERVICES

Catalog Description:

Builds on acquired concepts of the demographic characteristics of the low vision population and the types of personnel involved in service delivery to develop concepts of management on three levels: the individual case, caseloads and office management. Includes public relations methods, fund raising, program planning, personnel management, role-power and political considerations. Problem prevention, problem solving, contingency management and decision-making are also discussed.

Lecture hrs./wk. -2
Lab hrs./wk. -3

Topical Outline:

I. Determining low vision service needs:
    A. Review of demographics of low vision population;
    B. Review of definitions of personnel roles and low vision population;
    C. Review of social and legislative background of current low vision service systems.
    D. Review of current accreditation systems for low vision services.

II. Management Principles:
    A. Planning, organizing, staffing, directing, evaluating and monitoring cases and caseloads.
    B. Functional variables in individual case management.
    C. Caseload and organizational management:
        1. Identifying needs for services (individual and group services);
        2. Evaluating responsive low vision services.
    D. Management-by-objectives and accountability
    E. Communication links with "relevant others" (employers, employees, consumers, funding sources, political groups, the general public).
    F. Role theories: Interactions within the work environment:
        1. Motivation;
        2. Ambiguity and conflict

        3. Overload and stress

    G. Organizational policies and procedures; improving the low vision individual's participation in remediation.

    H. Basic financial management techniques; accounting systems.

III. Relating special needs to funding sources:

    A. Special needs groups;

    B. Current "model" programs - national and international perspectives.

Competencies:

I.A. The student will describe and differentiate legislation (state and national) involving or requiring low vision services; the student will collate the mandated benefits and services to which low vision individuals of all ages are entitled.

I.B. The student will review, analyze and critique the requirements, methods and recording systems for accreditation (of rehabilitation facilities; of educational agencies, etc.)

II.A. The student will list the activities involved in each of the following: planning, organizing, staffing, directing, evaluating and monitoring both cases and caseloads.

II.B. The student will describe the functional variables in individual case management by comparing two or three case studies.

II.C.1. The student will review a variety of methods of needs assessments for low vision individuals;

II.C.2. The student will review a variety of methods of needs assessment for low vision service agencies.

II.C.3. The student will select and evaluate two different service delivery systems (e.g. rehabilitation clinic, school, etc.) for low vision individuals.

II.D. The student will describe management-by-objectives and at least one other system of professional accountability used to monitor and evaluate services to low vision individuals.

II.E.1. The student will describe a multi-media public relations strategy that includes: a single page advertisement for placement in a professional journal, a 20-second spot announcement for public radio, a fund-raising appeal to the general public and a low vision service description brochure for consumers.

II.E.2 The student will outline a grant proposal that includes justification of need, purpose, service objectives, projected outcomes, personnel and budget requirements for a new low vision service delivery strategy.

II.F.1. The student will use role-theory concepts to analyze and describe problems of individuals within organizations.

II.F.2. The student will demonstrate a knowledge of formalized assumptions about individual needs (i.e. Maslow's hierarchy of needs) and their relationship to the work situation (the need for power, security, affiliation and achievement, etc.).

II.G.1. The student will develop an organizational chart that depicts the structure, assignment of general tasks, and reporting relationships of low vision personnel within a given organization.

II.G.2. The student will describe a range of service systems that allow for increased consumer involvement in the delivery of low vision services and will propose a minimum of 4 strategies to promote consumer advocacy.

II.H. The student will use available budgets, revenue and expense statements and balance sheets to describe basic accounting methods.

III.A.1. The student will identify a current gap in services relevant to special needs of low vision populations and will prepare a remedial service plan that could feasibly be implemented at either local, state or federal levels.

III.A.2. The student will demonstrate a knowledge of potential funding sources relevant to the promotion and/or delivery of low vision services to special populations.

III.B.1 The student will design a model program responsive to the documented needs of the low vision population using, where applicable, supportive data from both national and international low vision services.

Learning Activities:

1. Participate in and/or review National Accreditation Council on-site reviews and reports.

2. Role play: student as executive director attempts to convince board of the need to apply for accreditation.

3. Role play: student as manager resolves a conflict within an interdisciplinary team.

4. Role play: a client-administrator scene covering a wide range of potential problem-solving areas (e.g. client complains about receiving inadequate services).

5. Role play: different management approaches reflecting authoritarian and democratic leadership styles.

6. Role play: the contrasting and conflicting feelings of a successful practitioner (i.e. orientation and mobility instructor or special educator) in a recently appointed administrative position.

7. Role play: delegating work to team members with measurable goal and timeframe outcomes.

8. Analyze and critique a video-tape of a wide range of administrative situations (e.g. staff case-management sessions, consumer/service provider exchanges, formal staff presentation, etc).

9. Critique a wide range of public information material describing and promoting services to low vision individuals.

10. Based on actual data collected at a local level, participate as a professional team member in the development of a proposal for meeting the comprehensive needs of a particular low vision population.

11. Role play: different disciplines involved in a multi-disciplinary meeting to discuss service provision for specific low vision individuals.

12. Make on-site visits to a minimum of 2 service centers/agencies to review their methods for: financial management, documentation of services, effectiveness measurement and public relations strategies.

References:

1. A Committee of College and University Examiners, Taxonomy of Educational Objectives. (Handbook 1) New York: David McKay Company, Inc., 1969.

2. Bloom, B.S., Hastings, T.J., Madaus, G.F., Handbook on formative and summative evaluation of student learning. New York: McGraw-Hill Book Co., 1971.

3. Coulten, C.J., Quality assurance for social service programs: Lessons from health care. Social Work, Sept., 1982, 37, 397-402.

4. Coulten, C.J., Approaches to quality assessment in social work. QRB Special Edition, Spring, 1982, p.3-7.

5. Dunn and Dunn, Practical approaches to individualizing instruction. New York: Parker Publishing Co. Inc., 1972.

6. Goffman, E. Stigma. Middlesex, England, Penguin Books, 1968.

7. Greever, K.B., Leary, P.A. and Minton, E.B. Program evaluation: A beginning statement. U.S. Department of Health, Education and Welfare, Rehabilitation Services Administration, Washington, D.C. 20201, 1972.

8. Handy, C.B., Understanding organizations. Middlesex, England, Penguin Books, 1976.

9. Kibler, J.K., Barker, L.L., Miles, T.D., Behavioral objectives and Instruction. Boston: Allyn and Bacon, Inc., 1970.

10. Learning Research and Development Center, Individually Prescribed Instruction Manual. University of Pittsburgh, June 1967.

11. Lewis, J., A contemporary approach to nongraded education. New York: Parker Publishing Co. Inc., 1969.

12. Mager, R.F., Preparing instructional objectives. Palo Alto, CA: Fearon Pub., 1962.

13. O'Connell, S.E., The manager of communications. San Francisco: Harper and Row, 1969.

14. Popham, J.W., Wisner, E.W., Sullivan, H.J. and Tyler, L.L., Instructional Objectives. AERA Monograph Series on Curriculum Evaluation., Rand McNally and Company, 1969. (No. 3)

15. Tyler, R., Gagne, R. and Scriven, M., Perspectives of Curriculum Evaluation AERA Monograph Series on Curriculum Evaluation. Rand McNally and Company, 1968. (No. 1)

16. U.S. Department of Health, Education, and Welfare, A Trainer's Guide to Andragogy. Washington, DC: Social and Rehabilitation Service, 1972 (revised May, 1973).

17. Wright, G., Total rehabilitation. Boston: Little, Brown and Company, 1980.

PRACTICUM 3: SUPERVISED FIELD PRACTICE

Catalog Description:

This course will enable students to apply their newly acquired knowledge and skills in serving the low vision population. Emphasis will be placed on supervised work experience in service settings that are compatible with the students' disciplines (e.g. rehabilitation teachers in rehabilitation agencies, eye care specialists in clinics or rehabilitation centers). Students will have opportunities to identify students'/clients/patients' vision-related needs and formulate a plan with them for ways to meet these needs. In addition, students will participate in staffings in interdisciplinary work settings. Opportunities will be given to identify and work with selected referral sources to assist low vision individuals in maximizing services for their ultimate rehabilitation.

Lecture hrs./wk. - 1.5
Lab hrs./wk. - 4.5

Topical Outline:

I. Orientation to placement sites
   A. Review of services at the assigned field site
   B. Review of staff members and their primary functions
   C. Tour (if not already visited)
   D. Clarify roles and expectations of supervisor and student during field placement

II. Observation Techniques
   A. Review of data gathering process for service planning and decision making at the assigned field site
      - agency forms used - case flow practices
   B. Nonverbal data gathering
   C. Participant observer effects on service delivery

III. Plan Development and Revisions
   A. Clarifying needs

- B. Planning with low vision individuals and/or their present service providers the services, roles and responsibility areas
- C. Plan revision

IV. Service Delivery

- A. Observing and/or assisting in evaluations
  - 1. Low vision exams
  - 2. Functional evaluations (with and without low vision aids)
  - 3. Other (psychological, vocational, intelligence, etc.)
- B. Observing and/or assisting in training or teaching
  - 1. Reading (with and without low vision aids)
  - 2. Mobility (with and without low vision aids)
  - 3. Daily living skills
  - 4. Other
- C. Monitoring Case Progress

V. Resources

- A. Community referral sources
- B. Resource materials accessibility
- C. Use of interdisciplinary staff and staffings for problem solving

Competencies: (The student will be able to...)

I.A. Identify services and their sequences at each site

I.B. Name staff members and their functions

I.C. Chart the major organizational relationships

II.A. Indicate the type of data gathered, on which forms and its uses at the designated placement site.

II.B. Demonstrate uses of nonverbal behavior in decision-making.

II.C. Describe the ways an observer can impact the service delivery process.

III.A. Identify the tests and data collected which affect assessment of clients' low vision needs.

III.B. Develop a plan with client reflecting services, resources, roles, and responsibilities.

III.C. Describe when and how plans can be modified.

IV.A. Demonstrate how to evaluate a low vision client from his/her discipline's perspective and indicate what would be necessary to complete a comprehensive low vision evaluation.

IV.B. Demonstate how to teach a low vision individual to do one of the following with and/or without an aid: read, travel, write, daily living skills, etc.

IV.C. Review a case file and indicate the progress or lack of progress being made.

V.A. Name several nearby community services near the placement site and the supplementary services they offer. Assist in establishment or use of a patient outreach program.

V.B. Identify sources of reference and supplemental materials for working with low vision individuals.

V.C. Report on participation in a staffing or problem solving experience regarding low vision individual.

Learning Activities:

1. Review annual report and brochures from assigned field site.

2. Meet staff members and chart their relationships.

3. Meet with the supervisor at the assigned field site and develop a plan reflecting the objectives, roles, and responsibilities during the field assignment. Also discuss how the plan can be amended.

4. Review 10 completed case files. Compare these in terms of decision points and case flow factors.

5. Observe client interviews and record impressions of client from non-verbal cues.

6. Chart from tapes the level of responses from clients when a third party (observer) is present versus two in the interview. (if two-way mirrors are available, view interviews and chart with and without a third party observer).

7. Analyze 5 cases in the evaluation stage in terms of relevant needs yet to address.

8. Discuss with the service provider(s) their views on the services needed (by the 5 cases reviewed); compare with your recommendations. Meet with two clients and assist them in formulating a plan of services, roles, and responsibilities.

9. Assist 2 clients in amending their plans.

10. Interview 3 clients and gather preliminary assessment data. Conduct or review results of low vision exams. Assist in, and report results of 3 functional evaluations with low vision aids and 3 without. Analyze data from all tests and exams on 3 low vision cases and make recommendations to the service provider.

11. Record data reflecting progress being made by the trainer and low vision individual in each of the following categories - reading, mobility, daily living skills. Assist in training as capable.

12. Review 5 incomplete cases and analyze the progress being made in terms of timelines of services and quality (as perceived by the low vision individual and the service provider).

13. Develop resource file information, (as begun in Practimum 1 and 2) on the assigned field sites' referral sources. Review 5 case files and identify which ones could benefit from other community services. Make referrals on appropriate forms for the low vision individuals' use (if desired).

14. Review, catalog for future use and develop information on materials etc. being used to assist low vision individuals (at the field site) in learning to use their remaining vision effectively.

15. Observe several staffings and lead the review of at least six staffings on clients with which the student has worked.

PRACTICUM 4: INTERNSHIP

Catalog Description:

The internship experience assists students in development and refinement of skills needed to serve low vision individuals in selected service delivery settings. Emphasis will be placed on (1) working with cases from the beginning to the end (where possible), (2) using an interdisciplinary approach and (3) alternative strategies for planning and delivering services. In addition, students will contract with the Supervisor of the Internship Course with the approval of the PCO advisor, the speciality skills to be developed and/or demonstrated.

Lecture hrs./wk. 1.5
Lab hrs./wk. - 6

Topical Outline:

I. Contracting
  A. Identification of own career needs
  B. Identification of options during the internship for meeting those needs
  C. Review of minimal requirements for the contract (e.g. 4 clients minimum)

II. Service Delivery (4 clients/students/patients minimum)
  A. Coordinate the low vision evaluation process
    1. Low vision exams
    2. Functional evaluations
    3. Others
  B. Coordinate plan development
    1. Clarify needs
    2. Preparation of plan
    3. Plan revision
  C. Coordinate training activities
    1. Explanation of Diseases and Functional Implications
    2. Reading (with and without low vision aids)

        3. Mobility (with and without low vision aids)
        4. Daily living skills
        5. Other
    D. Integrate all services
        1. Other supportive services
        2. Community resources
        3. Monitoring progress
        4. Follow-up with all service providers
        5. Conduct staffings on own clients

II. Case Recording and Reporting
    A. Complete appropriate agency forms and case records
    B. (Monthly) Summarize progress and rationale for options selected
    C. Review case progress with internship supervisors
    D. Review status of contract with internship supervisors weekly

Competencies: (The students will be able to...)

I.A. State own needs for skill development or refinement.

I.B. State the options available at the field site.

I.C.-D. Incorporating the minimum requirements for the Internship course, develop a written contract reflecting own needs and ways the field site can be used to develop necessary skills.

II.A. Identify the types of assessments needed for each low vision applicant and arrange for these to be given. Analyze and interpret the implications for service delivery.

II.B. Develop with the client and/or other relevant service providers an appropriate written plan of services to meet vision-related needs.

II.C. Describe (and arrange for) training activities to enhance use of residual vision with and without low vision aids in eye care, reading, mobility, daily living, and other primary skills.

II.D. Assist low vision clients/students/patients in receiving primary and supportive services according to the plan (with revisions). Keep service providers informed of status. Make appropriate referrals.

III.A. State the rationale for keeping accurate records and using appropriate agency forms. Demonstrate ability to complete forms accurately.

III.B. Select important data from client contacts and case records to guide in decision making and report progress.

III.C. Accurately interpret client progress and identify alternatives when appropriate.

III.D. Justify progress being made towards fulfilling contract for the internship course.

Learning Activities:

1. Compare practicum experiences to date with (1) own expectations for skill development, (2) observe skills of low vision service providers (in student's own discipline) and (3) instructor's expectations and interpretation of level of skill development. The field site representative will describe opportunities from previous experiences with interns or future plans. Review the summary of student experiences previously assigned to that site. Review and discuss written minimum requirements with the on-site supervisor and PCO supervisor, then, prepare a preliminary contract and negotiate its contents with supervisors for the internship.

2. Interview five clients to assess preliminary needs for low vision services. Refer client to appropriate eye care specialists, educational specialists, and/or rehabilitation specialists to supplement own discipline skills in providing low vision exam and functional assessment. Summarize results of reports from each evaluation and submit interpretations to supervisor before planning services. Meet with each of assigned low vision individuals on caseload (after getting supervisory approval on interpretation of needs) and develop written plans of service. Provide each low vision individual the necessary training (either directly or indirectly). Monitor progress with and/or without aids. Meet with each low vision individual during each visit to clarify felt progress and Identify additional services. Prepare referral forms for support services in the community. Confirm with staff.

3. Complete forms and case records on each client for approval by supervisors. Justify decisions made with clients using appropriate

data from the case records. Compare similarities and uniqueness among the low vision being served. Review progress on contract with supervisor and revise as needed.

MASTERS THESIS/RESEARCH PAPER

As a culminating experience and exit requirement for the Masters degree, all students will be required to complete a thesis or research project. The purpose of this assignment is for the student to demonstrate the ability to conduct independent research, with faculty supervision. Students may choose between the thesis requirement and the project. In either case, the assignment is to involve the student in planning, preparing, searching for reources, writing and final preparation of a paper which is of greater magnitude than a course term paper and preferably of publishable quality. Experimental research is encouraged, but not a requirement in this assignment. All students will be encouraged to begin work on this activity during the semester in which Research 2 is taken. A preliminary draft of the research project or an outline of the thesis is an appropriate product for review in this course context.

The student's final product must be approved by a minimum of two members of the faculty of the Master's degree program. Additional faculty members may be involved in the student's thesis or project committee at the student's request.

E. Program Management Plan

The management plan is designed to facilitate the successful development, implementation and evaluation of the proposed Master of Science Degree Program. It identifies timelines and milestones in conjuction with a management by objective format and builds on the recommendations of the first National Advisory Council which met prior to the receipt of funding for the program. (See Appendix D for details). The director will be responsible for delegating responsibilities to assure the satisfactory and timely accomplishment of each objective.

Year 1

The major objectives for the first year focus on program development, student recruitment, administrative issues, financial planning, and evaluation strategies. Program development is being guided by a competency based instructional model (CBI) illustrated in Figure 1. This method identifies the tasks that need to be performed, their sequencing and their interrelationships. To achieve the objective of developing a program for educating students in vision rehabilitation which is operational by year 2, the following tasks are being completed in accordance with modified timelines shown in Chart 5.

1. Mission Development (see Box 1, Figure 1)

   A mission statement has been developed to serve as the philosophical and conceptual underpinning of all the program efforts. This statement serves as the basis for both short and long-range planning and as a guide for faculty members in implementation of the mission. This mission statement includes the context in which the program operates and the responsibilities that the developers have accepted or been assigned.
2. Function Definition (see Box 2, Figure 1)

   The general goals and functions that must be performed by graduates of the Master's Program have been completed. These are broad, general statements that subsume the more specific competencies and objectives. This component provides direction and framework for the educational program.

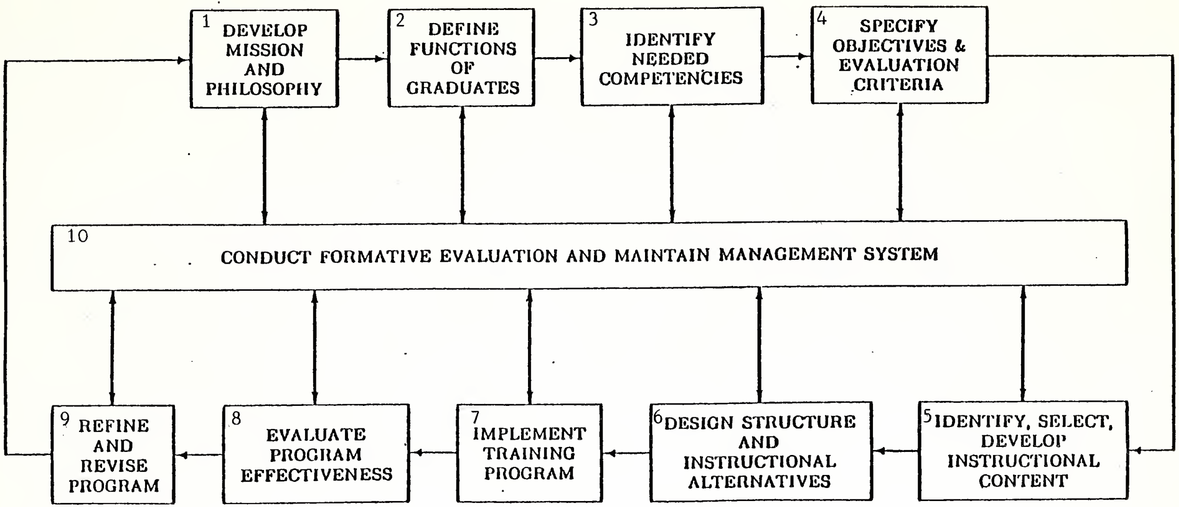
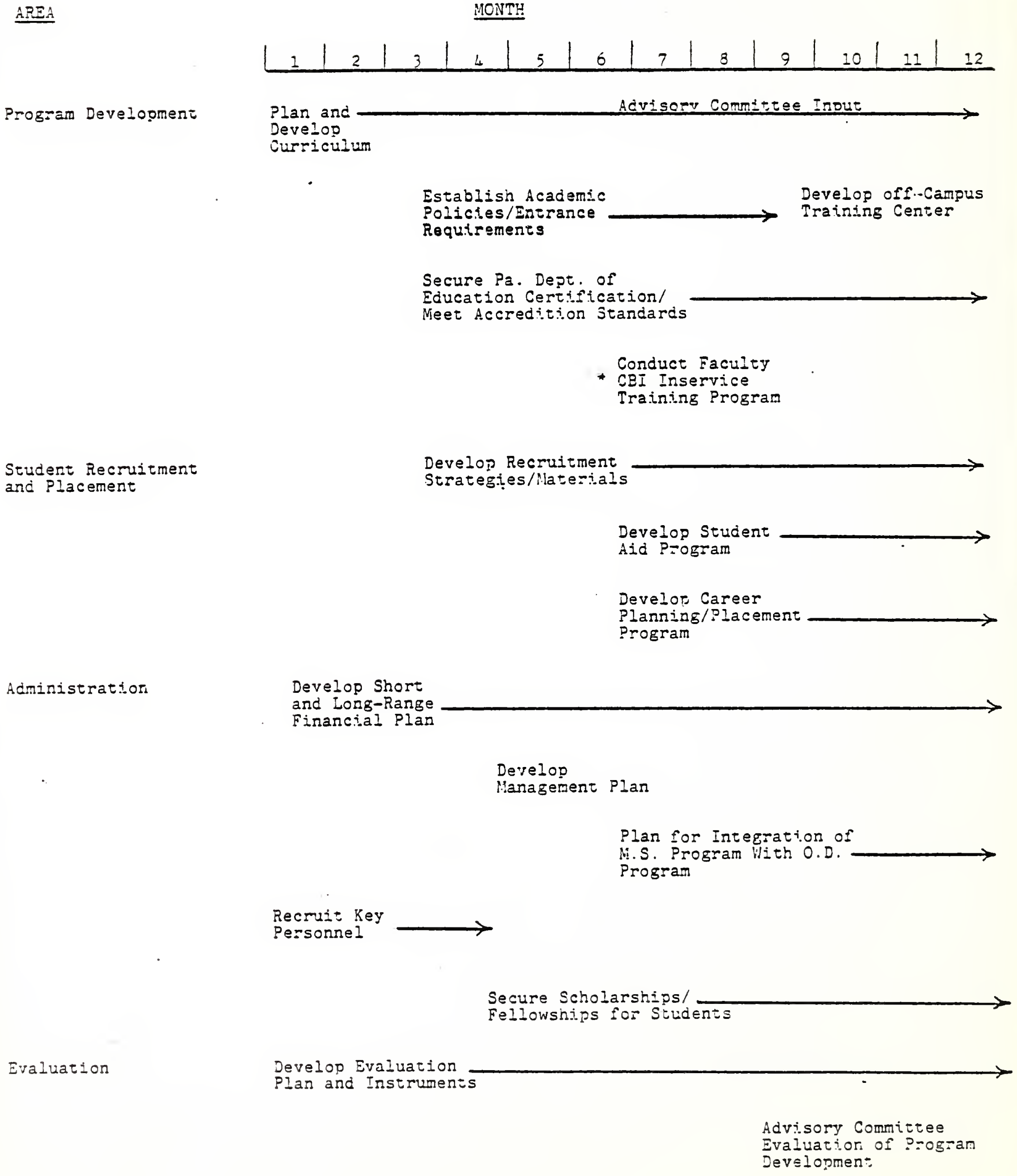

1 DEVELOP MISSION AND PHILOSOPHY
2 DEFINE FUNCTIONS OF GRADUATES
3 IDENTIFY NEEDED COMPETENCIES
4 SPECIFY OBJECTIVES & EVALUATION CRITERIA
10 CONDUCT FORMATIVE EVALUATION AND MAINTAIN MANAGEMENT SYSTEM
9 REFINE AND REVISE PROGRAM
8 EVALUATE PROGRAM EFFECTIVENESS
7 IMPLEMENT TRAINING PROGRAM
6 DESIGN STRUCTURE AND INSTRUCTIONAL ALTERNATIVES
5 IDENTIFY, SELECT, DEVELOP INSTRUCTIONAL CONTENT

Figure 1 : Model for CBI program development. (Adopted from "Competency-Based Special Education Personnel Preparation", by A. Edward Blackhurst.)[15]

CHART 5

FIRST YEAR TIMELINE


AREA
MONTH
1
2
3
4
5
6
7
8
9
10
11
12
Program Development
Plan and Develop Curriculum
Advisory Committee Input
Establish Academic Policies/Entrance Requirements
Develop off-Campus Training Center
Secure Pa. Dept. of Education Certification/ Meet Accreditation Standards
* Conduct Faculty CBI Inservice Training Program
Student Recruitment and Placement
Develop Recruitment Strategies/Materials
Develop Student Aid Program
Develop Career Planning/Placement Program
Administration
Develop Short and Long-Range Financial Plan
Develop Management Plan
Plan for Integration of M.S. Program With O.D. Program
Recruit Key Personnel
Secure Scholarships/ Fellowships for Students
Evaluation
Develop Evaluation Plan and Instruments
Advisory Committee Evaluation of Program Development

* Competency Based Instruction

Competency Identification
Objectives and Evaluation
Content Selection
Program Structure

See boxes 3-6 in Figure 1

To assure the best possible curriculum, leaders in low vision from across the nation were invited to a special retreat (see appendix E for names by work groups). Committees of experts met, brainstormed, and developed drafts of competencies for designated course areas, instructional objectives and content. The work of this group was further refined and integrated by a curriculum development committee at P.C.O. The results, therefore, as shown in the previous section truly reflect multidisciplinary viewpoints and some of the best thinking in the field.

To recruit twelve students for the initial program (including assisting with applying for student financial aid) is the next objective of the management plan for year 1. Tasks include publishing information on this new learning opportunity in major publications, on bulletin boards in educational institutions and sending brochures to varied public and private agencies. Approximately eight individuals have demonstated serious interest in enrollment.

Administrative areas are the focus of objective 3 to assure staff, space, equipment, and field placement sites are available in time for the beginning of the vision rehabilitation program and that the program is integrated with existing programs at the Pennsylvania College of Optometry. The program is currently in the process of internal review.

Objective 4 for year 1 is to identify and develop strategies to assure the financial security of the Master Degree Program. This long range plan will be developed during the last quarter of year 1 and implemented beginning in year 2. The last major objective in year 1 is to develop detailed evaluation strategies for year 2 that will assure execution in year 3 of a viable program of vision rehabilitation, one in which students can achieve the agreed upon competencies satisfactorily.

Year 2:

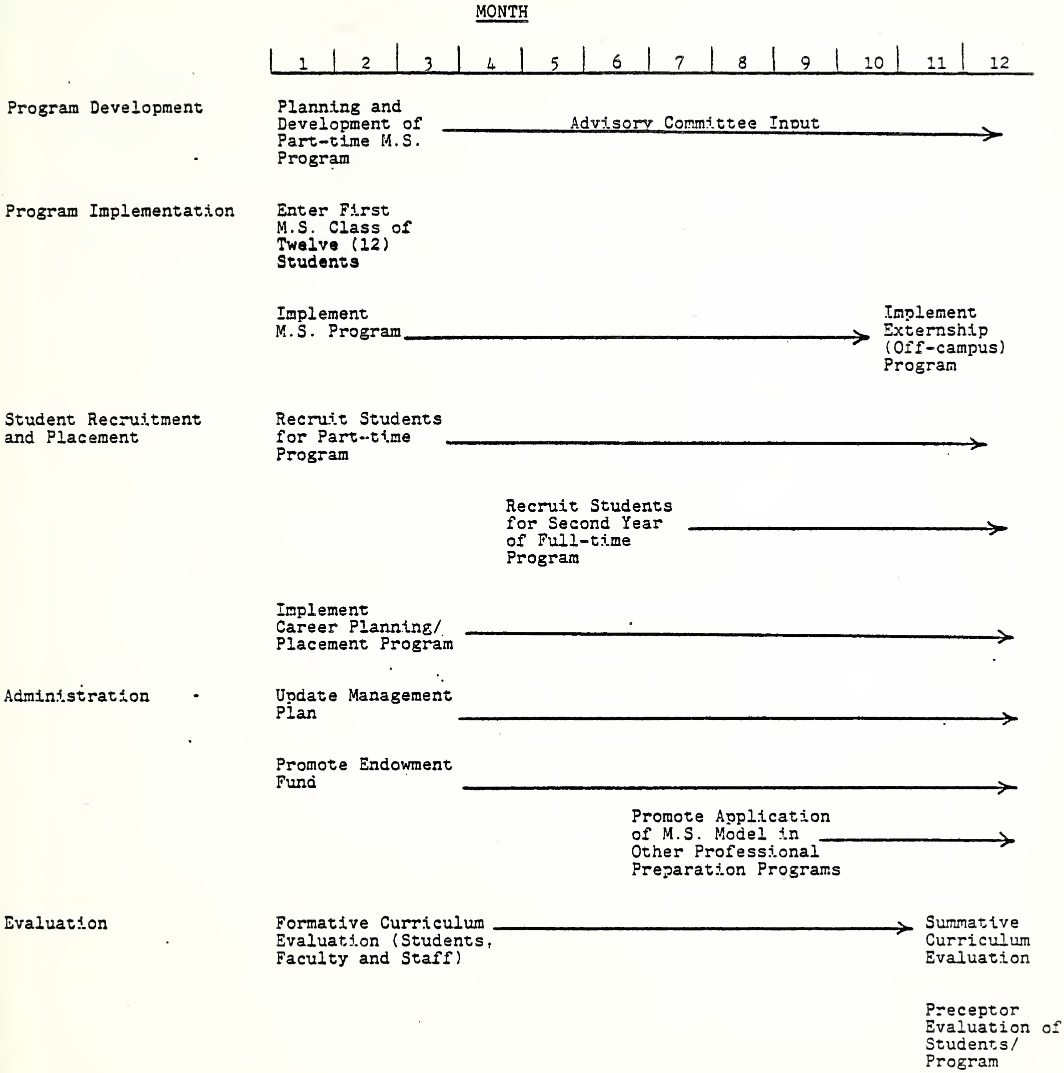
Major objectives for year 2 center on implementing the full-time program for students as smoothly as possible, initiating a program for part-time students scheduled to enter in year 3, and expanding administrative, financial and evaluative activities begun in year 1. Year 2 continues the cycle from the CBI model with emphasis on steps 7, 8, and 9 (see figure 1 page. It is important that year 2 provide on campus competency-based learning opportunities and field placement sites which can contribute significantly to preparing students for life after "schooling". In addition, a career planning and placement program will be implemented so that graduates of the full time program will maximize their opportunities for post-graduate employment in settings that will dramatize the impact of the program. Administrative activities will include the updating of the management plan, the promotion of the endowment fund and application of the Program Model to other professional preparation programs in the region and throughout the country. Program evaluation will include formative curriculum evaluation involving students, faculty and staff, in an effort to refine the program. The summative curriculum evaluation will occur at the end of the first year, with the advice and input of the National Advisory Committee. In addition, practicum program evaluations will be received from off-campus preceptors who will have had the opportunity to witness the functioning of the students in "real world" settings. (see Chart 6 for timelines.)

Year 3

During the third year, program activities will concentrate on refining the full-time program based on the experience of its first year. This process again will involve the guidance of the National Advisory Committee as well as the feedback received through the program evaluation process. In addition, there will be continued efforts to expand and diversify the off-campus training opportunities for the students. Program implementation will concentrate on entering the second full-time class, conducting the program, and implementing the first year of the part-time (summer) program. During the third year, the College will continue the recruitment process for both full- and part-time students, making adjustments in recruitment strategies based on the experience of the first two years.

CHART 6

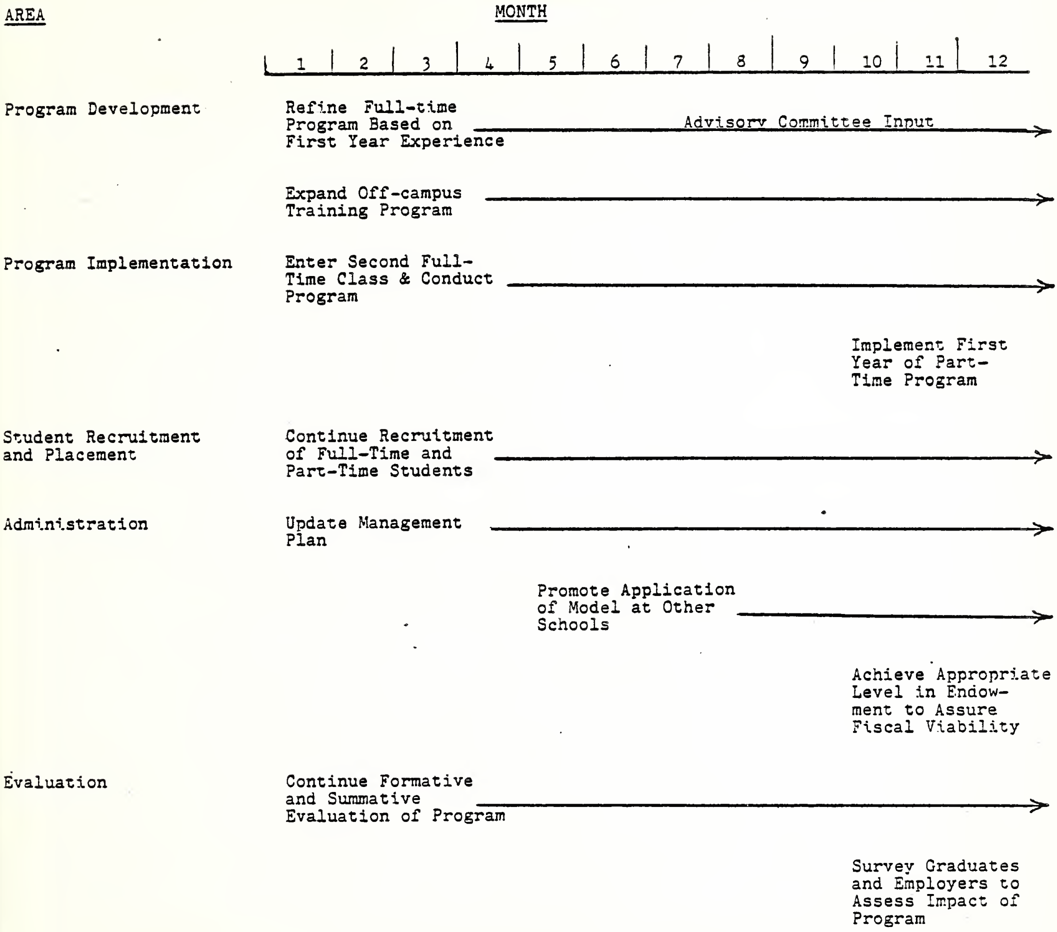
SECOND YEAR TIMELINE



The administration of the program will continue to promote the application of the model at other schools, update its internal management plan, and strive to achieve an appropriate level in the College's Endowment Fund to assure fiscal viability in the future. To accomplish this goal, the College will set aside a predetermined amount of money each year and establish a campaign to seek matching external funds for the Endowment. The evaluation process will continue to include both formative and summative evaluations, with emphasis on a survey of graduates and their employers, to assess the impact of the program. See Chart 7 for year 3's timelines.

CHART 7

THIRD YEAR TIMELINE



IV. RELATIONSHIP TO OTHER INSTITUTIONAL PROGRAMS

A. Academic Appropriateness

Over the past several years, the Pennsylvania College of Optometry has demonstrated an increasing awareness of, and commitment to, the needs of the low vision population. In 1975, the College established a formal relationship with the Philadelphia Center for the Blind and began rotating optometric externs through this facility. This unique optometric educational experience established a coordinated interdisciplinary approach involving eye care providers, educators and rehabilitation specialists in meeting the varied needs of the low vision individual. During this period, informal one-, two- and three-week training programs were offered to various professionals who wished to strenthen their training in vision rehabilitation.

In 1978, The Eye Institute, the College's clinical and patient care facility, was opened and the William Feinbloom Vision Rehabilitation Center was established. While the primary role of the Center has been direct patient care, it has assumed an increasing responsibility for research and education. An outgrowth of the latter has been the development of a six-week training program in vision rehabilitation which has been attended by several national and international professionals. This was developed in response to the consistent feedback received from the students taking the shorter programs that their exposure was "just not enough". Graduates of the six-week program continued to emphasize that an even more extensive training program was necessary.

Paralleling these efforts has been the college's growing reputation in the area of research and training. The College has continued to commit institutional funds to develop this potential and supported an active search for external funds to realize this goal. In January of 1982 the College was awarded a grant by the National Institute of Handicapped Research to establish the first and only Low Vision Research and Training Center in the nation. This Research and Training Center is built upon the strengths of the William Feinbloom Vision Rehabilitation

Center which, during its five year history, has helped thousands of low vision patients from all over the world.

The College has established a firm foundation and reputation in the areas of research and service delivery. The critical missing link is low vision education -- not just education in the form of short-term training programs, or through the traditional osmosis, on-the-job approach, but a formal, structured, broad-based, interdisciplinary graduate program to meet the proven needs of professionals serving the low vision population. In an attempt to resolve the existing educational needs, the College, over the last two years, has committed institutional funds to plan for the development of a Master of Science Degree Program in Vision Rehabilitation and established an Advisory Committee of nationally known professionals from various disciplines to help guide these efforts. (See Appendix D.) In addition, the College has also established a Vision Rehabilitation Education Endowment Fund (VREEF) to strengthen its institutional commitment to the proposed graduate program.

The Pennsylvania College of Optometry would be a most suitable locus for the proposed graduate program. It has the historical commitment and proven strengths to bring various disciplines together to address the underserved needs of the low vision population and professionals serving this population. The produce of these efforts will be a truly integrated and interdisciplinary approach yielding a model that can be transferred to other institutions, and one that holds significant promise for improved health care, a flexible and responsive educational program, and unique opportunities for research development.

B. Related Institutional Programs

1. The Doctor of Optometry Degree Program

The Doctor of Optometry degree program (O.D.) is the College's principle teaching program currently enrolling approximately 550 full-time students. It is one of the largest optometric training programs in the United States. Because of the breath and depth of resources that are available through this program, and the unique dimensions of the proposed master's program, a mutually-beneficial relationship emerges. The following is an outline of these benefits.

O.D. Program Benefits to M.S. Program:

(a) A stable optometric curriculum with academic and administrative policies and procedures in place.

(b) A rich pool of faculty from a variety of disciplines that will directly and indirectly contribute to the Master's program.

(c) A unique clinical setting (The Eye Institute) to promote and support the clinical experiential goals of the program.

(d) An immediate pool of optometry students for recruitment into the Master's program.

M.S. Program Benefits to the O.D. Program:

(a) An increased number of course electives for the optometry student.

(b) An expanded faculty.

(c) Expanded clinical services by virture of the addition of such new faculty disciplines as clinical psychology.

(d) A greater opportunity for optometry students to have interdisciplinary clinical experiences.

(e) The maximization of the personnel and physical resources existing in the O.D. program.

(f) An expanded research environment because of the broadened training and clinical programs developed.

(g) the option for the optometry student to pursue a joint O.D.-M.S. program.

2. The William Feinbloom Vision Rehabilitation Center

The William Feinbloom Vision Rehabilitation Center provides an interdisciplinary vision care program for the visually handicapped population. Comprehensive and individualized evaluations and training programs are designed for each person seen at the Center. The comprehensive low vision service involves an initial interview, a thorough eye examination, perscription of low vision aids, functional evaluations, training and, when necessary, any of the following services:

(a) Functional Visual Evaluations are made by special arrangements for children and for multiply-impaired individuals from whom responses are difficult to obtain with conventional examination techniques.

The staff is experienced in evaluating the visual potential of exceptional children, and can aid in the determination of appropriate educational goals. A special curriculum of vision stimulation can be initiated at the Center and continued through local resources in the home community.

(b) Pediatric Low Vision Evaluations including educational, perceptual and developmental evaluations are available.

(c) Special Contact Lens Evaluation, including the latest techniques to improve the cosmetic appearance of a disfigured eye are provided.

(d) Electrodiagnostic (ELDX) Tests which measure the brain's response to visual stimuli, can be conducted at the Center. ELDX tests are particularly useful for individuals who are thought to have no vision, but who exhibit visual behavior.

(e) Genetic Counseling is provided for those patients/families who have an inherited visual impairment.

(f) Orientation and Mobility staff provides instruction in mobility techniques and beginning cane skills for individuals who are experiencing difficulty with independent travel.

(g) Ophthalmological Consultation is available in both general and specialty areas.

(h) Social Services are provided by social workers, and/or rehabilitation counselors who interact with each patient during the intake process. Should further services be requested, such as financial consideration, individual, family or group counseling, or referrals to other sources, social services are available. Continued follow-up services are conducted through social services to evaluate one's follow-up progress.

An interdisciplinary staff of optometrists, special educators, orientation and mobility specialists, social workers, rehabilitation counselors, and other consultant specialists provide services to approximately 900 new patients per year. The Center will serve as the key-clinical teaching site for the proposed program.

3. PCO Low Vision Research and Training Cnter

The Low Vision R & T Center was established in January 1, 1982, through a grant awarded by the National Institute of Handicapped Research. Research projects and training activities address two core areas, both of which focus on maximizing the independent living status of individuals with low vision. The first core area examines the psycho-social aspect of visual disabilities; and the second core area focuses on the development and evaluation of diagnostic procedures, treatment methods, training techniques and technological aids.

One research project concentrates on the development of a computerized information system as a necessary first step to descriptive, evaluative, and predictive research. This model low vision data base provides information on demographic, clinical, functional, psychosocial and vocational characteristics of low vision persons.

Two other research projects look more closely at the assessment and training protocols for visually handicapped individuals with and without optical aids. The first assesses the teaching of eccentric viewing and latter the use of fresnel prisms for persons with severely constricted visual fields. Research results will document effective intervention strategies.

An array of regional, state, and local training activities have been presented throughout the year. They have been designed around service delivery needs as expressed by professionals serving the visually handicapped population throughout the state and region.

4. National Workshops for Educators Working with Visually Handicapped Children

The Office of Education has funded PCO for a three year inservice project which began June 1, 1982. Through this project, PCO will provide a series of national workshops for educators who serve low vision children. National surveys of special educators will be conducted, education need areas will be determined, and workshops will be geared toward the present needs as expressed by these teachers. Workshop topics, to date, include those such as vision stimulation, training with optical aids and other topics not adequately reviewed in teacher training programs. A model curriculum will be developed, implemented and evaluated throughout the project. In addition, a low vision booklet series for educators serving low vision children will be published upon the completion of the project. Students from the proposed program will benefit from the workshop information and curriculum materials as they are developed and updated.

C. Long Range Plan

The increasing magnitude and diversity of activities in the area of low vision has stimulated the development of the concept of the Institute for Vision Rehabilitation of the Partially Sighted. This concept is rooted in the belief that the College has a unique opportunity to significantly improve the quality of life for millions of partially sighted individuals throughout the United States and the world.

The Institute will bring together eye care providers, rehabilitation personnel, consumers, academicians and researchers in such a way that the problems of the partially sighted population are approached in a collaborative and synergistic fashion. Research, training and service delivery will be interdependent and mutually supportive. The Institute will be a place where students, practitioners, researchers, and scholars from different disciplines can acquire the knowledge, skills, and orientation that will be significantly contribute to improving health services delivery to the vastly underserved partially sighted population.

Such a center of excellence will conduct programs of rehabilitation research aimed toward the discovery of new knowledge which will improve rehabilitation methods, management, and service delivery systems to alleviate or stabilize handicapping conditions, and promote maximum physical, social and economic independence. Service delivery and research programs will emerge from the particular needs of the handicapped population and the new knowledge developed from such experiences will contribute cumulatively to a coherent body of knowledge for the resolution of practical rehabilitation problems. The Institute will contain five key components:

1. The William Feinbloom Vision Rehabilitation Center

   Since its establishment in 1978, this Center has become internationally reknowed for its low vision service, using the interdisciplinary model. Given the present demand for services as well as the large unmet need, it will be necessary for the Center to strengthen and expand its services over the next several years. This unique Center will act as the cornerstone for other programmatic goals of the Institute.

2. Educational and Training Programs in Vision Rehabilitation

   The Institute will house the first Master of Science Degree Program in low vision in the United States as well as a variety of on-campus and off-campus short-term, continuing education programs for various health professionals in the low vision field. Present graduate programs for professionals in the area of visual impairment concentrate almost exclusively on the needs of the totally blind population. The College's Master of Science Degree Program in Vision Rehabilitation will emphasize the unique needs of the partially sighted or low vision population thereby responding to a critical unmet educational need. The goal of this unit is to transfer new research findings and new technologies into improved service delivery through a variety of educational and training programs throughout the country.

3. Low Vision Research and Development

The Institute will promote and support a program of basic and applied research in the area of low vision. In addition, it will establish technical laboratories as well as support services necessary to improve and/or develop new low vision devices to help maximize the employability and independent living status of low vision patients.

4. The Interdisciplinary Low Vision Library

In order to support both the academic and service delivery programs, a unique interdisciplinary library is planned that will bring together relevant knowledge from such disciplines as optometry, ophthalmology, education, rehabilitation, bio-engineering, psychology, and economics as an essential resource to students, researchers, educators and practitioners from all over the world. This unique learning resource center will also provide direct library services to low vision patients presently not available from other sources.

5. Community and Allied Programs

The Institute will make available space and associated resources to a number of cooperating agencies and consumer groups. For example, the College will promote the integration of vocational rehabilitation and social work agencies into the Institute so as to promote the greatest coordination and access to a continuum of low vision services.

Incorporating all the above elements into the Institute for the Vision Rehabilitation of the Partially Sighted will yield a unique international center that will be capable of addressing the full spectrum of low vision problems in an effective manner and disseminating knowledge and experience which will enhance the quality of life for low vision individuals.

V. RESOURCES

A. Faculty and Staff

The Pennsylvania College of Optometry believes that one of its greatest strengths is the excellence of its faculty. Along with high quality students, an excellent faculty is the ingredient necessary of achieve the educational mission of the college.

Over the past five years, the development of the faculty has been remarkable, especially for those involved in the clinical educational programs. This dramatic improvement has not occurred by chance. The college has made a concerted effort to recruit high quality primary care optometric educators with training from other schools and colleges of optometry, invested a significant number of dollars in release time for faculty to pursue scholarly activities, significantly increased the funding of faculty travel to scientific and professional meetings, developed an administrative structure which encourages and facilitates individual and team research, and developed an annual faculty evaluation system that not only measures the performance of each faculty member but, more importantly, projects a development program for the future. These efforts have resulted in improvements from faculty in the areas of teaching, service, and scholarship. However, the college's efforts toward faculty development would be meaningless without individuals on the faculty committed to excellence for themselves, for the programs in which they participate, and for the college.

(1) Composition

There are 64 individuals comprising the regular teaching faculty of which 55 are males and 9 females (14%). Of these individuals, five hold the rank of full professor (7.8%), 21 the rank of associate professor (32.8%), 24 the rank of assistant professor (37.5), 5 the rank of instructor (7.8%), and 9 hold limited or special appointments (14.1%). For the first time in the history of the college, all faculty have earned a professional or academic doctorate degree. These include 44 individuals with Doctor of Optometry degrees, 7 with Doctor of Philosophy degrees, 2 with combined OD/PHD degrees, 8 with combined OD/MS degrees, and 3 with Doctor of Medicine degrees.

In addition to this "nucleus" of teaching faculty, other individuals participate in the academic programs. There are 5 primary care residents, 4 board certified ophthalmologists, 3 optometric technicians, 2 orientation and mobility instructors, a pediatric resident, a low vision resident, an eduational consultant, a low vision therapist, a nutritionist-allergist, and an audiologist.

(2) Recruitment

The recruitment of faculty follows the general guidelines for the Affirmative Action/Equal Opportunity Employment Program of the institution. For each position, an internal and/or external search is conducted. All candidates must forward their applications to the chairperson of the Faculty Recruitment Committee which is appointed by the Dean of Academic Affairs. The committee must supply the Dean with written information regarding the strengths and weaknesses of each candidate. The Dean of Academic Affairs makes final recommendations to the President, the only individual within the college with the authority to hire an employee.

The College will be recruiting two key faculty members for the master's program: a clinical psychologist and an eye care professional with a Ph.D. in vision research. The latter is a key position in the integrating of clinical, didactic and research activities for the graduate students.

3. Appointments

The major documents governing faculty affairs at the institution include the Conditions and Responsibilities of Faculty Employment, the Tenure Policy, and the Promotions Policy.

The tenure document defines the various types of faculty appointments including probationaly, tenure, limited and emeritus. Probationary appointments are granted to those faculty members who intend to obtain tenure and are engaged in roles designated as tenure trct positions by the Dean of Academic Affairs. After five full-time years, an individual has three years to receive tenure. If tenure is not attained during this period, there are no subsequent probationary appointments. Tenure appointments are granted to those individuals who have been approved by the Board of Trustees for tenure. Limited appointments are offered to individuals for specific services in teaching, research, or other scholarly activities. These appointments are one year, subject to individual evaluation and are designated as non-tenure tract positions. No academic rank is granted to individuals on limited appointment.

4. Workload

The academic work schedule is designed to facilitate all faculty members achieving excelllence in the areas of teaching, scholarship, and service during the contract week. For full-time faculty, each work week usually consists of 5 days (35 hours) of college activities. The percentage distribution of activities in teaching, scholarship, service, and administration is determined annually at the beginning of each contract year. A full-time equivalent (1.0 FTE) teaching load varies depending on the academic arena in which the teaching occurs. A full-time equivalent teaching load is 6 hours of lecture per week, 24 hours of laboratory instruction per week, 30 hours of patient care per week, or a combination of the above. These teaching hours are supplemented by responsibilities in the areas of scholarship, service, and administration.

For the 1981-82 academic year, the average percentage of the academic work week devoted to teaching is 44.7% (20%-71% range), for scholarly activities 25.7% (0%-65 range), for service 15.6% (5%-71% range), and for administration 14% (0%-50% range). For part-time faculty, the work week is based on the percentage of their contract, which determines the hourly time at the institution. The percentage of contractual time for an individual faculty member in the area of teaching, scholarship, service, and administration should reflect a balance between the growth and development needs of the college.

5. Salaries

The salary scale for faculty members is subject to annual review and ratification by the Board of Trustees. The components which determine a faculty member's salary include at least one or more of the following: base salary, annual increment, administrative increment, merit increment and promotion increment which is added to the previous year's base salary. The annual increment is determined by the Board of Trustees through the Office of the President. Each year, a specific amount of money is set aside for additional compensation to faculty members who have demonstated meritorious performances during the previous fiscal year. The awarding of merit is based on the evaluation of each faculty member compared to the expectations of his/her contract. Those who have demonstrated meritorious performances above and beyond that stipulated in the contract will receive merit. The process of evaluating an individual faculty member's performance for merit includes student evaluations, peer evaluations, tract coordinator evaluations and evaluations by the Office of Academic Affairs. The Dean of Academic Affairs makes the final decision on the awarding of merit through recommendations to the President. Faculty members who are promoted receive an automatic 4% increment added to their previous year's base salary.

TABLE I

FIVE YEAR COMPARISON OF FACULTY SALARIES

1977-78 1981-82

Academic Year Contracts (9 months)

Rank	Range	Mean	% Increase	Mean	Range
Prof.	$28,518-31,318	$29,918	25%	$37,384	$36,401-38,366
Assoc. Prof.	21,546-32,287	25,250	12%	28,217	25,963-32,046
Assist. Prof.	16,811-20,618	18,467	32%	24,318	25,963-32,046
Prof.	$34,784-35,520	$35,152	29%	$45,336	$40,592-53,017
Assoc. Prof.	31,340-34,430	32,464	32%	42,786	32,081-48,600
Assist. Prof.	19,264-29,491	24,677	13%	27,872	24,000-31,400
Instructor	10,500-17,702	15,256	48%	22,513	22,000-23,540

6. Tenure

Through application of the Promotion and Tenure Policies over the past five years, the college has increased the level of sensitivity and expectations of the faculty with respect to achievement of excellence in teaching, scholarship, and service. The guidelines in the current Tenure Policy clearly indicate that excellence is expected in these areas.

Tenure has existed since the early 1970's. In 1976, a new policy was approved by the faculty and ratified by the Board of Trustees in January 1976. In 1979, a joint administrative/board and faculty committee was appointed to reevaluate the original policy. With the approval of all segments of the college, a new policy was ratified by the Board of Trustees in May 1980. Along with other changes, the current policy calls for five year renewal tenure to those faculty members hired after the date of its adoption and traditional tenure for those employed at the time of its approval.

Presently, there are 21 tenured faculty members who comprise 40% of those eligible. Four of the tenured faculty are professors, 12 associate professors, and 4 assistant professors. Over the next three years, 15 faculty will enter the tenure period and, therefore, the college expects the percentage of tenured faculty to increase significantly. There is no limit currently set by the Board of Trustees with respect to the number and/or percentage of faculty who can be tenured.

7. Key Personnel in M.S. Program

Anthony F. DiStefano, O.D., M.Ed., M.P.H. is the Assistant Dean for Academic Development at the Pennsylvania College of Optometry. He presently serves as Director of the Low Vision Research and Training Center at the College, and has administrative responsibilities for all the College's research programs, as well as development of new academic programs. In addition to his professional training in optometry, he holds a Master's of Public Health from the Johns Hopkins School of Hygiene and Education, and a Master's of Education from Temple University. Dr. DiStefano has written and directed a number of research and training projects. His administrative experience also includes an extensive background in institutional planning, having served as the Assistant to the President for Institutional Planning for three years, and having had the responsibility for the College's long-range planning process.

Dr. DiStefano has chaired the Department of Community Health and Behavioral Sciences and presently is an Associate Professor of Public Health. He has taught and contributed to various courses at the College. Dr. DiStefano will serve the program in two capacities, assisting in programmatic and administrative integration, as well as in achievement of fiscal viability. Dr. DiStefano will integrate the M.S. Program, in its broadest sense, with the College's present Optometry and Optometric Technician programs. He will identify the inter-relationships among these programs, find ways they can be mutually supportive and help to manage and maximize resources for the M.S. programs, both in didactic and clinical skills. As an example, he will help utilize and integrate the College's vast experience in developing, monitoring and evaluating optometric externship programs, and more quickly and effectively develop this component of the M.S. Program.

On the administrative level, he will facilitate internal evaluation and approval of the Program through the Board of Trustees and the Joint Student/Faculty Educational Policy and Curriculum Committee, as well as be the liaison with the Middle States Association (Accrediting Agency) and the State Department of Education, which must approve the Program. In addition, he will promote the achievement of fiscal viability for the Program by seeking out additional sources of funding and ensuring the Vision Rehabilitation Education Endowment Funds reaches its projected 1985 goals. He will also contribute in such courses as "Institution to Low Vision" and "Management of Comprehensive Low Vision Services".

Audrey Smith, M.Ed. is the Director of Educational Programs of Vision Rehabilitation at the Pennsylvania College of Optometry, and the Director of Training and Research Utilization for the College's Low Vision Research and Training Center. She coordinates one- to six-week continuing education programs in vision rehabilitation for eye care, education programs in vision rehabilitation for eye care, education and rehabilitation specialists, and was the developer and coordinator of the College's first internship program for rehabilitation students.

In 1971, she received her Master's of Education in Special Education of the Visually Impaired from the University of Pittsburgh. She worked 5 years as an orientation and mobility specialist at the Western Pennsylvania School for Blind Chidren, and 5 years as a low vision mobility specialist at the Philadelphia Center for the Blind and the William Feinbloom Vision Rehabilitation Center.

For the past 8 years, Ms. Smith has been teaching graduate courses for the Special Education departments at both Temple University and the University of Pittsburgh. Ms. Smith is recognized throughout the country for her work in the field of low vision education and rehabilitation. She is known for her pioneering efforts in low vision perceptual enhancement, vision stimulation, and visual field enhancement systems. Over the past ten years, she has been involved in local, regional and national presentations, workshops and training programs. She has served as national coordinator for low vision training workshops as well as lecturer in numerous others. Her publications reflect a wide range of activities and research, and include the development of nationally distributed video tapes on low vision education.

Ms. Smith is assuming responsibility for developing and coordinating the College's proposed Master of Science Degree Program in Vision Rehabilitation.

Richard Brilliant, O.D. is Chief of the William Feinbloom Vision Rehabilitation Center. In 1976, he graduated from the Pennsylvania College of Optometry, where is now an assistant professor. He has been teaching at the College for the past five years. His teaching responsibilities include the College's course in "Clinical Low Vision" as well as in the instruction and supervision of over 50 optometric residents per year at the Feinbloom Vision Rehabilitation Center. He has been active in local and national speaking engagements as well as research and publications in the area of low vision education. He is optometric consultant to Elwyn Institute, Staff Optometrist at Temple Hospital Department of Ophthalmology in Philadelphia, and consultant to the Veterans' Hospital in Maryland.

Dr. Brilliant has served as 1982 president of the Low Vision Interest Group of American Association of Workers for the Blind and is editor of the low vision section for the Review of Optometry. He presently serves as a member of PCO's Protection of Human Subjects Committee. He is a past recipient of the American Optometric Association's Research Grant for studying fresnel prisms as field expanders, and has also studied eccentric viewing, effects of colored filters on improving visual contrast and other topics. Dr. Brilliant has spoken before varied audiences on low vision and optical aids and has published numerous articles on low vision aids.

Dr. Brilliant will play a key role in the development of eye care specialists' academic and clinical tracts, and will be actively involved in teaching activities for all students. In February of 1982, Dr. Brilliant was chosen by the College student body as "Clinical Educator of the Year". This award reflects the excellent caliber of teaching for which Dr. Brilliant is known.

Gale Watson, M.A., Ed., will be an instructor and field work coordinator for the proposed program. In 1976, Ms. Watson received her M.Ed. in Special Education for the Visually Impaired from the University of Alabama in Birmingham. For the past ten years she has served in a variety of educational roles and has gained a national reputation in the field of education of the visually impaired.

Prior to receiving her degree, Ms. Watson spent two years as an instructor of communication skills to teenage visually and hearing impaired students. After receiving her degree, she was a teacher and low vision coordinator in Georgia. For two years she coordinated itinerant educational and low vision services for a visually impaired population ranging in age from birth to twenty-one (21) years. During this time she performed visual screenings and follow-up training in home and school settings. She was also a part-time lecturer in Special Education courses at the University of Georgia. In addition, Ms. Watson coordinated local field testing for the University of Berkeley's Science Activities for the Visually Impaired (SAVI) and the American Printing House for the Blind's Metrics Project. From 1978 to 1982 Ms. Watson worked as an educational specilaist at the William Feinbloom Vision Rehabilitation Center of the Pennsylvania College of Optometry. Here the range of her educational activities broadened as she evaluated and trained low vision children and adults for reading and other near tasks with and without optical aids, and supervised special education interns in conjunction with university teacher preparation programs. She worked in this interdisciplinary setting with eye care, education and rehabilitation specialists, and served as a liaison between educational agencies and the WFVRC providing follow-up programs for students receiving low vision aids and training. During this time, she guest lectured at several universities including University of Pittsburgh, Temple University, Hunter College and several colleges of optometry across the country.

In 1982, Ms. Watson joined the staff at the Office of Academic Development of the Pennsylvania College of Optometry, where she presently coordinates an Office of Special Education grant. Her major responsibilities on this grant are to develop and implement a series of workshops across the country, for special education teachers working with visually handicapped children. She is also writing a collection of low vision curriculum guides for teachers of these children.

Susan M. Kershman, Ph.D., received her Ph.D. from the University of Pittsburgh in 1975 with a major in Early Childhood Education of the Handicapped, and wrote her dissertation on "A hierarchy of tasks in the development of tactual discrimination skills in young blind children."

Dr. Kershman is an experienced educator and nationally known leader in the field of education of the visually handicapped. Her professional experience in this field encompasses a wide range of roles and responsibilities over the past sixteen years. Prior to receiving her doctorate, she worked in Canada as a teacher in preshool education of the hearing impaired as well as a clinical parent educator. She was also a lecturer at the McGill University School of Human Communication Disorders In Montreal. After receiving her doctorate, she continued her career in personnel preparation at the University level. From 1975 to 1979, as Assistant Professor at the University of Kentucky, she developed, implemented and coordinated the Program in Early Childhood Education of the Handicapped. During this time, from 1977 to 1979, she originated, and was Program Director of the Deaf-Blind Intervention Program at the University of Kentucky.

She joined Temple University's faculty in 1979; and from them to December of 1982, she revised and updated their Program in Education of the Visually Handicapped. She applied for and received program approval for certification. Prior to Dr. Kershman's arrival at Temple, there were only two part-time students. By the time she left, because of the program's closing (due to Temple University's financial difficulties), there were fourteen actively enrolled students and several who had to be turned away. Her dedication to the program and its students, as well as her consistent hard working, professional attitude succeeded in turning Temple's program around and upgrading its academic standing.

Beginning in January of 1983, she was hired by the Pennsylvania College of Optometry with the major responsibilities of assisting in the development of the Master of Science degree program in Vision Rehabilitation. Her responsibilities focus on the Special education component of the program.

Dr. Kershmam is active in serveral professional groups at the local, regional, and national levels. She submitted and was funded by the Office of Education for two proposals related to education of the visually handicapped in the last few years. Her publications reflect a broad scope which range from book chapters to journal articles and government reports. Her extensive publications, speeches, distinction as a national leader in education of the visually handicapped, university teaching experience and reputation for academic excellence more than qualify her to serve as a faculty member in this program.

Laura Edwards, M.S. is currently Program Coordinator for the Pennsylvania College of Optometry's Low Vision Research and Training Center. She is responsible for planning, organizing and evaluating research and training activities involving special educators, eye care specialists, researchers and rehabilitation professionals.

In 1974, Ms. Edwards received her M.S. degree in rehabilitation counseling from Virginia Commonwealth University. From 1975 to 1982, she was a continuing education specialist in one of the country's twelve regional rehabilitation continuing education programs under the Rehabilitation Services Administration, presently housed under the Office of Education. In this position, she assessed training needs, designed, developed, and delivered training programs and services, evaluated training results, coordinated and distributed information on training programs, resources and practices, developed and nurtured organizational relationships and contributed to the training field through research, publications and professional development. She also custom-designed, developed, and presented a multi-level training program which launched selected organizational development activities in serveral organizations. She has presented, by inviation, at several conferences and workshops on the topics of "Career Management". "Reality Management", "Time Management", and "Developing Continuing Education Programs for the Professionals Working with the Visually Handicapped."

Her competency areas include: writing, editing, facilitating learning, managing and directing, public speaking, counseling and guidance, resource identification, research dissemination and utilization, needs assessment, conference and workshop coordination, program planning and creative problem solving. Ms. Edwards bring a wealth of experience and competency to the program, where her proposed activities will include program evaluation, public relations, student counseling, placement and career planning as well as developing interinstitutional systems for evaluating student teachers at various educational settings.

Duane Geruschat, M.A., as a low vision Mobility specialist at the interdisciplinary William Feinbloom Vision Rehabilitation Center and the Center for the Blind in Philadelphia, has had a multiplicity of experiences in functionally evaluating and training the visually impaired. Working closely with eye care specialists, social workers and other professionals, he is required to design educational and rehabilitational programs for individuals and mobility aids, vision stimulation and concept development. Supervisor of the only formal low vision mobility internship program in the country, Mr.

Geruschat has trained mobility students from universities nationwide.

A noted speaker in the field of low vision mobility, Mr. Geruschat has presented at seminars, national conferences and workshops on orientation and mobility, low vision, optical aids, functional aspects of vision loss, training techniques, and other topics. As consultant to numerous university programs he has aided in low vision curriculum development and taught graduate level courses on educational implications of low vision.

Mr. Geruschat has previously researched and published articles and training manual chapters on "Illumination and Color," Distance Training with Low Vision Aids," "Functional Implication of Eye Pathologies," etc. He is completing a doctoral program in Special Education at Temple University where his interests have led to the development of a statistical analysis of variables of low vision evaluations to pinpoint predictors of success. He is also currently studying the attitudes of eye care specialists toward the visually handicapped, and developing protocols for facilitating positivity.

Mr. Geruschat is nationally known for his expertise in the field of orientation and mobility. For the past four years he has enjoyed a positive professional working relationship with the proposed faculty in this program. His reputation and experience make him well qualified to teach the orientation and mobility course.

Anne Barber, M.Ed. Presently serves at the William Feinbloom Vision Rehabilitation Center where she functionally evaluates and trains visually impaired individuals of all ages both with and without low vision aids. With an educational background and enthusiasm for expanding traditional mobility to explore its low vision and psychosocial aspects, she is now researching the effects of Fresnel prisms on the independent travel and stress level of persons with peripheral field constrictions and developing training protocols.

Ms. Barber has coordinated low vision programs for the Education Service Center in San Antonio, Texas, the Texas Society for the Prevention of Blindness, The Texas Lighthouse for the Blind and the Texas School for the Blind in Austin. Her responsibilities required that she be skilled in teaching the safe and independent travel of low vision individuals as well as use of their residual visual skills with low vision aids, concept development and sensory integration. Ms. Barber has served in several administrative positions for state and regional chapters of the American Association of Workers for the Blind and has coordinated and spoken at seminars and workshops nationally.

Stephen Whittaker, Ph.D. is assistant professor of physiological optics at the College with principle responsibilities in the area of low vision research. Dr. Whittaker received his Ph.D. from Northeastern University in ocular motor neuro-physiology in 1979. He has a number of publications in eye movement research and has received extramural research finding from NIH, NIHR, and the Pennsylvania Sight Association and Eye Research Foundation. He is presently funded by tne National Eye Institute, NIH, to study eye movements in low vision individuals. Dr. Whittaker will contribute to both the teaching and research portions of the program.

William R. De l'Aune, Ph.D. - Dr. De l'Aune is presently Research Director at the Eastern Blind Rehabilitation Center of the Veterans Administration Medical Center in West Haven, Connecticut. In that position, he is responsible for all research activities at the Center and promoting research in the areas of blindness and low vision. Most relevant to the proposed research and development center are Dr. De l'Aune's experience in the creation of computerized database systems and their application in evaluating the impace of specific factors on the rehabilitation of the visually impaired. He has devised and implemented a database system under the auspices of the Low Vision Research and Training Center of PCO for the William Feinbloom Vision Rehabilitation Center. This system has established computerized information retrieval and specifically assessed the impace of psychosocial factors in enhancing independent living and vocational rehabilitation of visually impaired individuals.

Dr. De l'Aune has published extensively on research in orientation and mobility and psychological factors in adjustment to aids among other diverse topics. He is an invited spokesman on research for the visually impaired at seminars and conferences throughout the country. A recognized authority on experimental design in this area, he serves as co-editor of research for the Journal of Visual Impairment and Blindness and written a chapter on the subject in the definitive orientation and mobility textbook, Foundations of Orientation and Mobility. For ten years, a research consultant to agencies and organizations serving the visually impaired, he has advanced the qualifying and quantifying of factors related to safe and independent trave. Dr. De l'Aune will be a visiting faculty member.

Sarah Appel, O.D. Dr. Appel is presently a clinical optometrist at .the Feinbloom Center. She is an optometric consultant to Elwyn Institutes For Vision Clinic and served as a low vision rehabilitation residency at the Eye Institute. As a student at PCO she was honored with the William Feinbloom Low Vision Award in 1979 for excellence in clinical low vision. Dr. Appel has written articles on low vision, spoken at various regional seminars and workshops and has participated in researching distance low vision aids.

Robert Ruggerio, O.D. is an assistant professor of Optometry at the Pennsylvania College of Optometry. At the college he is chief lecturer and coordinator of the course in Vision Rehabilitation. In addition to this course, Dr. Ruggiero is a full time clinical instructor at the William Feinbloom Vision Rehabilitation Center, where he examines patients and supervises interns, is a consultant to Elwyn Institute Low Vision Service, and a consultant to Embreeville State Hospital. Dr. Ruggiero has lectured and participated in conferences around the country concerning low vision care, has published in this field and is involved in clinical low vision research.

Dr. Edward Deglin is Clinical Assistant Professor at Temple University's Department of Ophthalmology and Clinical Associate at the University of Pennsylvania School of Medicine. He received his M.D. from Jefferson Medical College in 1968 and is presently the Director of the Retinal Service at Temple University Health Sciences Center. Dr. Deglin is Chief of the Vitroe-Retinal Service at the Pennsylvania College of Optometry's Eye Institute and will be called upon to contribute to the eye care specialists' academic and clinical tracts for the proposed Master's Program.

Dr. Joseph Toland received his M.D. degree from Hahnemann Medical College in 1963. He holds staff positions at several Philadelphia hospitals. Presently, he is Director of the Ophthalmology Group at The Eye Institute and Professor of Pathology at the Pennsylvania College of Optometry. In addition, he is Clinical Instructor in Ophthalmology at Thomas Jefferson University Hospital, with special interests in subnormal vision. His expertise will also be called upon to contribute to the eye care specialists' academic and clinical tracts for the proposed Master's Program.

Dr. Alvin Byer is Associate Professor of Optics at the Pennsylvania College of Optometry. He is a clinician and private practitioner for low vision patients. He has published several papers in low vision and optics and will be a contributing professor to the Master's Program.

Dr. James Carroll is Associate Professor of Physiological Optics at the Pennsylvania College of Optometry. He received a Ph.D. in Physics from Indiana University in 1970 and his O.D. from the Pennsylvania College of Optometry in 1978. He has been involved in extensive research projects in visual science, has published widely, and will contribute to the research component of the Masters Program. He brings unique abilities to the development and evaluation of diagnostic procedures for this project. His strengths include a background in physiological optics, research, psychophysics, statistical analyses through the use of computers, and perceptual modification. He is a member of PCO's Research and Learning Committee and Computer Committee. Dr. Carroll has published numerous rigorous research studies and presented on various topics at optometric conferences.

In addition to the above professionals, ophthalmologists, optometrist, social workers, counselors, educators and rehabilitation specialists, with years of experience at the College's Eye Institute, will be contributing to course development and teaching in the proposed Master's Program. To complement these resources, members of the National Advisory Committee such as Dr. Natalie Barraga, a renowned educator in the field of visual impairment, and Dr. Eleanor Faye, the country's leading low vision ophthalmologist will be contributing to course development and serving as lecturers in the program.

(8) Administration

Table II represents the Organization Chart of the College. The Director of the Master's program reports directly to the Assistant Dean of Academic Development, who in turn reports to the Dean of Academic Affairs.

B. Facilities

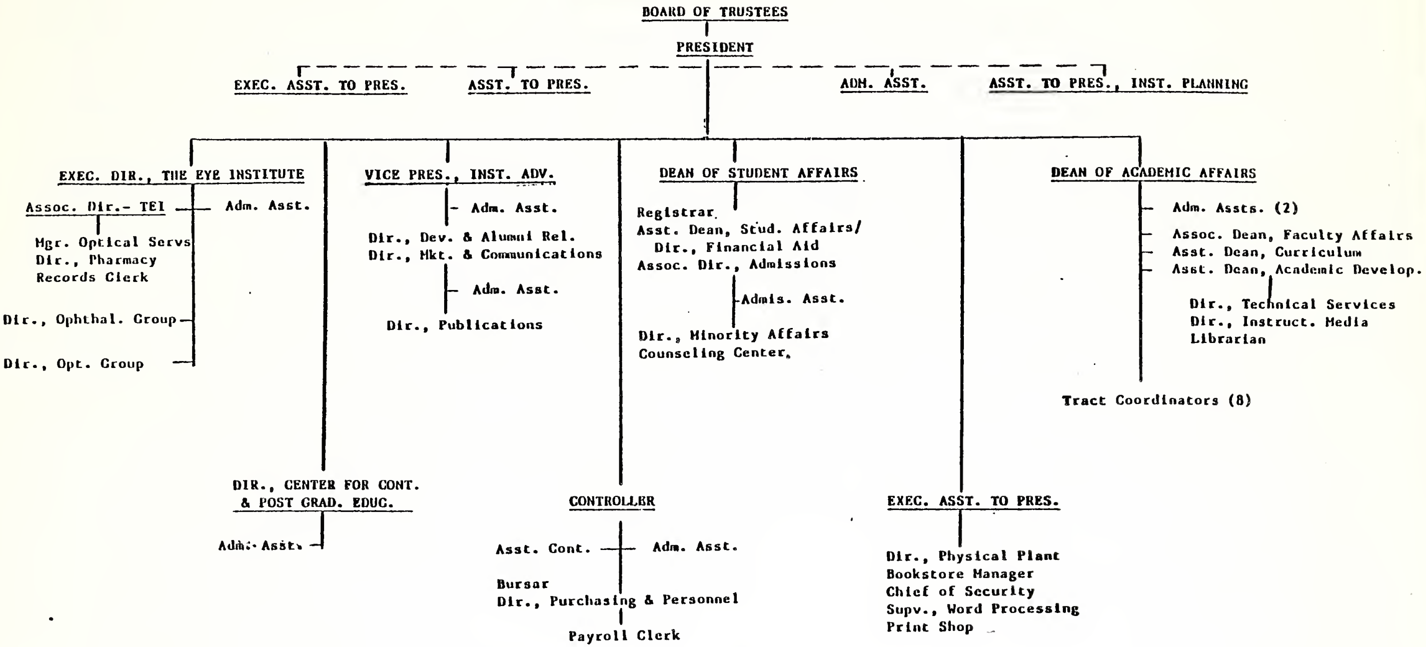
(1) Physical Plant

The main academic building, with a gross square fottage of 87,771, was dedicated in 1969 and consists of Fitch Hall and "B" building. Fitch Hall houses most of the administrative offices, classrooms, optometric methods laboratory, library, bookstore, student lounge, faculty lounge, support staff lounge, and some faculty offices. "B" building houses additional faculty offices, laboratories, research laboratories, the department of external education, the department of continuind and post-graduate education, the department of instructional media, the department of technical services, the print shop, and the animal care center.

TABLE II

PENNSYLVANIA COLLEGE OF OPTOMETRY

ORGANIZATIONAL CHART (1981-82)



The value of the technical equipment in Fitch Hall and "B" building amount to $1,097,922.

The animal care center is under the overall supervision of the Dean of Academic Affairs. This area covers 600 square feet and consists of four animal rooms, surgical and storage rooms, and has been registered with the United States Department of Agriculture since January 31, 1980. The center partially meets the NIH standards. The major problem being addressed in the animal care center is HVAC (heat, ventilation, and air conditioning) which should be independent of the system for the rest of "B" building. A temporary, independent HVAC system is currently being provided, with a permanent one planned for installation within the next two years. The college is striving toward the goal of accreditation by the Association for Accreditation of Laboratory Animal Care.

There are two on-campus apartment buildings with a combined gross square footage of 83,757 and with a maximum capacity to house 341 students. On the eastern border of the campus are ten row homes used for housing new faculty members on a short-term basis.

The MacElree Building, purchased in 1972, consists of 11,340 gross square feet and houses the finance and business office, the offices of the directors of physical plant, security, and personnel and purchasing. In addition, a significant amount of the college's storage is located in the McElree Building along with many of the maintenance shops.

The Eye Institute is a combined patient care and clinical education facility of 51,600 gross square feet and contains technical equipment valued at $1,294,500. The college has recently expanded its energy management system by replacing the Honeywell "BOSS" system (operative in the academic building) with a Honeywell "Delta" system which ties The Eye Institute into the main academic building. The new system is anticipated to effect substantial energy cost savings.

(2) Security

The college maintains its own security force, consisting of a director and nine officers augmented by work study students. Security is provided on a twenty-four hour basis with two security officers on duty at all times. The TV security monitoring system is housed in the MacElree Building and allows continuous viewing of most of the college campus.

(3) Bookstore and Printshop

The bookstore, located in Fitch Hall, and the print shop, locatd in building "B", are both auxiliary services provided to the college community. The bookstore makes available to students, faculty, and alumni, textbooks and small hand equipment as well as office supplies.

The print shop handles bulk printing for all college department, including examinations manuals, and numerous forms for routine operation.

(4) Word Processing Center

The word processing center, located in the administrative suite of Fitch Hall, acts in support of most department of the college. Typing for the Office of Academic Affairs, examinations, manuals, grant applications, and faculty is routinely handled. The word processing center also cooperates with the Office of Student Affairs in preparing materials for bulk mailing for recruitment, admission activities, etc. Institutional Advancement utilizes the center in preparing material needed for fund raising and various alumni activities.

C. Library

The Albert Fitch Memorial Library presently employs two full-time individuals with considerable experience in library and information science.

The Director of the Library, Ms. Marita Krivda, joined the college in 1980 and holds a Master of Science degree in Library and Information Science from Drexel University. Additionally, she has taken several post-graduate courses in library science and related fields. Her professional experience is extensive, and she has brought significant organizational and technical skills to the overall operation of the Library. In addition to the Librarian, the college also employs a Library Technician, Mr. William Monroe, who is presently pursuing work at Drexel University for his Master of Science degree in Library and Information Science. Their combined background and experience have served to strengthen the services and bibliographic resources of the Library.

As indicated in Table III, the college has made considerable progress during the last five years in the allocation of money to the Library. The Library budget has, in fact, doubled. Although the amount of money allocated to books and periodicals has fluctuated over the years, the current fiscal year's allocation is the healthiest that it has ever been.

The Library has made significant progress in both withdrawing out-of-date materials and acquiring current book/journals of primary importance to the academic, clinical, and research needs of the college. In the past year and a half, over 300 reference books, including directories, dictionaries, pharmacopoeias, and major medical text books have been purchased. Table IV provides some insight to the transformation that is occurring in the Library's collection.

Currently, the library's holdings are distributed as follows: 4,472 bound journals, 4,376 books, 436 audio-visual holdings, and 416 uncataloged holdings.

New indexing and abstracting titles have been ordered. These include: _Current Contents_: _Clinical Practice_; _Exerpta Medica_: _Geriatrics and Gerontology_; and _Excerpta Medica_: _Physiology_. During the period of July 1980 to September 1981, 28 new titles have been added to the collection. Since July 1980, the collection of monographs has had an

TABLE III

LIBRARY BUDGET 1976-1982

FISCAL YEAR	SALARIES & BENEFITS WITH STUDENT HELP	BOOKS & PERIODICALS	SUPPLIES SERVICES	TOTAL
1976-77	$27,000.00	$11,000.00	$ 2,504.00	$40,504.00
1977-78	35,700.00	8,800.00	2,150.00	46,650.00
1978-79	38,100.00	13,000.00	17,885.00	68,985.00
1979-80	40,533.00	13,998.00	2,802.00	57,333.95
1980-81	49,504.00	18,000.00	10,740.00	78,224.00
1981-82	47,279.00	26,000.00	10,940.00	84,219.00

TABLE IV

LIBRARY HOLDINGS

CALENDAR YEAR	TOTAL HOLDINGS	VOLUMES ADDED	VOLUMES WITHDRAWN	NET TOTAL
1976	13,100	435		13,535
1977	13,535	189		13,724
1978	13,724	243		13,967
1979	13,967	399		14,366
1980	13,366	560	1854 (Catalogued) 2000 (Uncatalogued)	10,072
1981 (to-9-1-81)	10,072	345 (Books) 136 (Journals Bound)	853 (Catalogued)	9,700

infusion of current biomedical, pharmaceutical, clinical and general reference books. The total number of books added to the collection since mid 1980 has been 465 titles--an average of 30 books per month. The college plans to increase its book holdings especially in such areas as sensory perception, psychology of perception, developmental disorders such as dyslexia, visual training, vision rehabilitation, pharmacology, and statistics. In addition, the collection will be expanded in certain clinical specialties including pediatrics, geriatrics, physical diagnosis, internal medicine, emergency medicine, and sports medicine. In order to guide its collection development efforts, the Library Director has developed a Collection Development Policy in which the collection growth is given direction and priorities.

The library staff recently undertook the major project of dividing the card catalog into medical subject headings used by the National Library of Medicine. This subject catalog is a major step towards the establishment of a bibliographic control over the collection. In addition, the decision has been made to reclassify the collection using the National Library of Medicine's classification schedule. Since the library is a MEDLARS Center, the staff can access CATLINE, cataloging for over 85% of our collection. All new books are currently given both a Dewey Decimal Number and a NLM classification number. When the Library acquired the OCLC terminal projected for the 1982-83 fiscal year, the conversion of the collection will be started. It is projected that the entire card catalog as it now exists will be replaced in two years.

Plans are being made to computerize many technical service operations. The Library intends to purchase an OCLC terminal and become a member of PALINET, the regional center for OCLC at the University of Pennsylvania. This will enable the Library to add its holdings to a major, national bibliographic system, to have access to the holdings of 3,500 libraries, and to catalog/produce new cards for its entire collection.

The Library also has on permanent loan audio-visual equipment from the Instructional Media Department. There has to be better integration and coordination between the Instructional Media Department and the Library so that students and faculty can best utilize all of the audio-visual resources available.

D. Instructional and Research Technologies

(1) Instructional Media

Instructional Media Services assist the entire college community in developing and maintaining the best possible environment for optometric education through the utilization of audio-visual programs and equipment. In addition to project development and writing and design services offered by the department, specific production services such as photography and recording are available to faculty and students.

Most traditional audio-visual projects such as copywork, audio or video tape recordings and play backs, overhead transparency preparation, etc. are initiated simply by contacting the department. Unusual projects involving extensive production time, materials, and personnel costs are usually discussed with the appropriate cost-center administrator prior to the involvement of the Instructional Media Department.

Each of the major lecture rooms and The Eye Institute amphitheatre are equipped with carousel slide projectors and overhead transparency projectors. Improvements were made in 1980 in the audio-visual systems for the two major lecture room in Fitch Hall, which makes them compatible with the amphitheatre of The Eye Institute. Each of these rooms has a permanent lectern and audio-visual control system, with its own amplifier. Audio-visual equipment in these rooms is routinely maintained by this department.

Various types of audio-visual equipment are on loan from the Instructional Media Department to the Library. These include video cassett players, microfiche readers, slide/audio cassette units, standard audio cassett units and a television receiver.

The department has encourage the use of the television medium for lectures, laboratory, clinical and self-instruction programs. Extensive use of sophisticated television systems occurs in The Eye Institute. A listing of programs in the college's videotape collection is available with playback possible into small meeting rooms, classrooms or the Library.

Production services offered by the Instructional Media Department include location or studio photography, copying of slides, film process and printing, over-head transparency production, graphics, audio tape duplication and editing, and videotape duplication and editing.

(2) Technical Services

The Technical Service Department of the college provides design, construction, instrument modification, repair and development services for the research, clinical and teaching programs. Metalwork, woodwork, plastic work, electrical equipment services, and optical and mechanical-optical design are areas of expertise. Technical Services is kept extremely busy in maintaining the vast investment in ophthalmic equipment throughout the college.

During the 1981-82 year, the Technical Services Department contributed to 35 separate research projects, 19 technical aids projects, 8 audio and instrument security devices, as well as 18 clinical and 8 low vision projects in The Eye Institute. This department provides an invaluable resource that enhances not only the teaching but also the patient care and research activities of the college.

E. Inter-Institutional Arrangements

The Pennsylvania College of Optometry through its educational and clinical facilities provides services to local, state and regional communities and agencies which serve visually impaired persons. A network of agencies, organizations and universities providing a wide variety of services to the visually impaired (i.e. educational, rehabilitational, psychological, social economical health care related, transportational) has been established to meet the needs of the visually impaired consumer population in this region. Presently PCO presently enjoys a close alliance with the sister organizations in this network; drawing upon and providing support to the capabilities of these resources. Following is a listing of some of these community resources. A sample description of local agencies, their services and PCO linkages are detailed here, however a shared experience such as visual impairment can create a "community" that cuts across geographic boundaries. Recognition of this fact has created similar interactions to those enumerated here with agencies and institutions on a regional and national level as well.

Samples of Community Agency Interactions

CONSUMER ADVOCACY

1. RETINITIS PIGMENTOSA (RP) FOUNDATION

   Persons with retinal degenerative diseases have organized this leading consumer advocacy group to identify consumer needs and future research. Through PCO staff members presentations at local chapter meetings, a system of cross referrals has been established.

2. CONSUMERS OF LOW VISION SERVICES GROUP

   A group of consumers are in the process of initiating an organization that may eventually include self-help, referral, and advocacy functions. The PCO staff has been supportive in the beginning stages of this group.

CONSUMER/PROVIDER COUNCILS

1. COUNCIL OF AND FOR THE BLIND OF DELAWARE VALLEY

   A consumer/provider council with representation of individuals from Delaware Valley agencies and organizations serving and/or representing the blind and visually impaired. The council disseminates information and seeks to improve cooperation among agencies and organizations. The WFVRC is a council member with representation at monthly meetings.

2. PHILADELPHIA LOCAL CHILDREN'S TEAM

Team members include staff from early intervention programs, intermediate units, head start programs, day care programs, MH-MR programs, priviate schools, private agencies, community health care providers, and concerned parents. This group meets periodically to discuss the service needs of handicapped children and their families, inform the public of available services, and improve the coordination of service delivery. The WFVRC is a team member with representation at scheduled meetings. PCO has participated in the annual health fair sponsored by the Children's Team.

REHABILITATION SERVICES

1. PENNSYLVANIA OFFICE FOR THE VISUALLY HANDICAPPED (OVH)

This public funded state rehabilitation agency provides services to the vocationally oriented adult population. As consultants to Elwyn Institute's Low Vision Rehabilitation Service (EILVRS) the PCO staff has been directly involved in providing services to an average of 360 clients referred from OVH per year. Occasionally clients, who do not find EILVRS accessible and/or those who are in need of specialized services, are referred to WFVRC. OVH caseworkers and the PCO social service staff interact while carrying out case mamagement, referral, and resource seeking functions. OVH staff have received staff training via the Feinbloom Lecture Series cosponsored by EILVRS and PCO.

2. ELWYN INSTITUTES

A private, non-profit human services agency which is providing residential and out-patient education and rehabilitation services to multi-impaired, mentally retarded, physically impaired, deaf and hearing impaired, blind and visually impaired, developmentally delayed and brain injured populations. Two days per week optometric and instructional staff from the PCO deliver low vision services on consultant basis to the Elwyn Institute Low Vision Rehabilitation Service (EILVRS). Major referral sources are via an established OVH contract, and via a referral agreement between Elwyn and Scheie Eye Institute. Elwyn has been a co-sponsor for the PCO Lecture Series.

3. NEW JERSEY (NJ) COMMISSION FOR THE BLIND

This public funded state rehabilitation agency serves children and adults with eductional and vocational goals. The ongoing interaction between NJ Commission's educational and vocational rehabilitation staff has formalized a system of cross referral. The NJ Commission has participated in staff training via the PCO Lecture Series.

4. PENNSYLVANIA ASSOCIATION(S) FOR THE BLIND (PAB)

These are 5 separate, non-profit, voluntary agencies, each providing a different array of services to the blind and visually handicapped residents of its county. Overall these include casework services, mobility services, transportation, counseling, and recreation. Delaware County PAB has established a pre-vocational and sheltered workshop, and Stinson Towers PAB has an "Equal Opportunity Apartment Complex". A system of cross referrals has been established. Mobility interns placed at the WFVRC have provided direct services to PAB clients from Philadelphia and Montgomery Counties. PCO social service staff has participated in Philadelphia PAB's in-service training programs for Philadelphia agencies and hospital staffs.

5. NEVIL INSTITUTE FOR REHABILITATION SERVICES

"Referral to a Low Vision Service and Interpretation of the Results", an in-servie training program prepared and presented by the PCO to the Nevil staff, has initiated formalized cross referrals. Social service providers interact on a frequent basis in carrying out referral, case management, and resource seeking functions. The participation of the PCO social service staff in the social work group sponsored by Nevil has formalized links between social service departments of agencies and hospitals serving the visually impaired.

6. EMBREEVILLE STATE HOSPITAL

This residential setting is a publicly funded facility serving adult multi-handicapped individuals. Through a contractual agreement the PCO staff is providing in-service training, visual assessment, and individualized vision stimulation programs for clients through bi-monthly on-site visits. Documentation of this program will generate increased knowledge and ability by vision care and vision rehabilitation specialists to meet the needs of adult multi-handicapped visually impaired persons who have been underserved.

7. JMS ASSOCIATES

This private corporation provides mobility consultation and direct service in the 5 county area. Currently, mobility interns placed at the PCO are delivering direct services to visually handicapped clients referred to JMS Associates.

EDUCATION

1. INTERMEDIATE UNITS (IU's)

With public funding, the Intermediate Units provide consultation, resource, and itinerant services to the visually impaired students in the public school system. Students are referred by classroom teachers and parents for low vision and functional vision evaluations. Recommendations for vision stimulation or training, with or without optical aids, are carried out by the teacher of the visually impaired employed by the IU. These teachers have received in-service training via PCO Lecture Series.

2. ST. LUCY'S DAY SCHOOL

This parochial school, part of the Archiocese of Philadelphia, provides specilaized educational services to visually impaired children. Many students who attend St. Lucy's have been evaluated by the PCO team. A large portion of these students have received vision stimulation instruction, which has been carried out by the classroom teacher in consultation with the PCO staff. The parents' support group of St. Lucy's is a resource often recommended to parents of children not enrolled at St. Lucy's.

3. OVERBROOK SCHOOL FOR THE BLIND

This system provides educational services to visually impaired children in the Philadelphia public schools on a resource and itinerant basis and provides privately funded services on a residential basis. The PCO staff has provided consultations, optometric examinations, and funding for a vision stimulation project, which is designed to study the effects of a light box with various slide targets on the visual behavior of visually handicapped and/or multi-impaired students. Screening and examinations for low vision and multi-impaired children have been provided also. Personnel at Overbrook have attended numerous in-service training events at PCO.

LIBRARY SERVICES

1. LIBRARY FOR THE BLIND AND PHYSICALLY HANDICAPPED

This publicly funded free library service meets the special needs of the visually and physically handicapped. A system of cross referrals has been established through PCO's participation in the library's Annual Community Resources Day.

PUBLIC SERVICE ORGANIZATIONS

1. LIONS CLUBS

A local, state and national community service organizations which provides services to the blind. Local clubs have been informed of the role of low vision services provided to the visually handicapped population. They have subsequently made referrals and assisted those unable to afford services or prescribed aids. Local Lions Clubs have widely disseminated information regarding low vision services in their state publications.

2. NEW EYES FOR THE NEEDY

A private agency which operates from an endowment and provides eyeglasses to those in need. This service has been a resource for thse unable to afford the cost of both conventional prescriptions and/or visual aids.

The mission of creating greater and broader community resources is ongoing. During the five years since PCO established the Feinbloom Center and its academic programs in low vision there has been a steady growth of interaction with local, regional and national resources. The Low Vision Research and Training Center funded by National Institute of Handicapped Research and the Low Vision Personnel Preparation for Special Educators grant awarded by the Office of Special Education has provided new information to the field; trained more professionals in low vision, and further strengthened inter-agency ties.

The impact of these close alliances on the low vision master's program is the opportunity for further sharing of resources for the purpose of providing quality educational experiences to Low Vision program students who in turn will provide quality services to the visually impaired consumer upon graduation. The administration and faculty of the low vision Master's program will establish dialogue with these agencies for information sharing, guest lecturing, student observation and and internships, etc.

Throughout these five years it is clear that PCO has operationalized its understanding and commitment to the development of links with sister agencies and organizations to promote the delivery of complimentary and complete servcies to visually impaired consumers, and will continue this policy and process in future years.

VI. RELATIONSHIP TO OTHER REGIONAL PROGRAMS

The unique and individual nature of visual impairments requires similar unique and individualized programs to prepare professionals serving this population. The traditional approach of professionals who serve a single facet of visual impairment in isolation has begun to give way to the multifaceted interdisciplinary interpretation of services, represented by PCO's Feinbloom Center and the Low Vision Masters Program.

Despite the varied university preparation programs in this region, none offer the type of program proposed by the Pennsylvania College of Optometry. The proposed Master's Program is the only one of its kind both regionally and nationally focusing on the low vision population, with an interdisciplinary program represented by interdisciplinary faculty and staff. (See Training Needs section, page 18, for more detail).

Because of the more traditional approach of most programs, and their faculty's recognition of the need to provide information on low vision to their students, various universities have in the past five years called upon the expertise of PCO's academic and clinical staff in low vision to teach courses and provide internship experiences in low vision.

Some of the university programs in which PCO staff have consulted on and taught low vision are:

Temple University, Spec. Ed. & Ophthalmology, Phila, PA
George Peabody College, Nashville
Hunter College, New York
University of Houston, School of Optometry, Houston
University of Alabama, School of Optometry, Birmingham
Western Michigan University, Kalamazoo
State University of New York at Geneseo, Geneseo
Florida State University, Talahassee
University of Nebraska, Lincoln
University of Wisconsin, Madison

University of Georgia, Athens
University of Illinois, DeKalb

Low Vision Internships for students from the following universites have been provided at the Feinbloom Center:

California State University, Los Angeles
Boston College, Boston
Cleveland State University, Cleveland
Hunter College, New York
San Francisco State University, San Francisco
Temple University, Philadelphia
University of Wisconsin, Madison

Students and faculty at these universities have received information, lectures and internships not presently available to their programs or other internship sites. Other established university programs in this region provide personnel preparation for services to the visually impaired in special education, rehabilitation, and orientation and mobility. Following is a regional breakdown of the programs in this region by states:

Special Education for the Visually Impaired:

Pennsylvania:

Kutztown State College

- Undergraduate degree in special education for the visually impaired awarded.
- Emphasis on academics (elementary and general)

University of Pittsburgh

- Master's Level and Doctoral Level degrees are awarded.
- Emphasis on academics and Orientation and Mobility skills

Virginia:

University of Virginia

- Master's level and doctoral level degrees are awarded.

New York:

Dominican College

- Undergraduate degree awarded academics, orientation and mobility skills, training with specialized equipment (optacon, CCTV, etc.) & perceptual skills are emphasized

Hunter College

- Master's Level Degrees awarded - Emphasis on both visually handicapped and multihandicapped programming

Teacher's College, Columbia University

- Master's and Doctoral Level degrees awarded

Maryland:

John Hopkins University

Master's level degree awarded

Rehabilitation Counseling:

Maryland:

Cappin State College

- Master's level degree in rehabilitation counselor Education

University of Maryland

Master's level degree in rehabilitation counseling

New Jersey:

Seton Hall University

- Masters level degree in rehabilitation counselor education.

New York:

Hofstra University

- Master's level degree in rehabilitation counselor education.

New York University

- Master's level degree in rehabilitation counselor education.

Syracuse Univesity

- Master's level degree in rehabilitation counselor education

SUNY - Albany and Buffalo Campuses

- Master's level degree in rehabilitation counselor education

Pennsylvania:

Pennsylvania State University

- Master's level degree in rehabilitation education.

University of Pittsburgh

- Master's level degree in Rehabilitation Counseling.

University of Scranton

- Master's level degree in Rehabilitation Counseling.

Virginia:

Virginia Commonwealth University

- Master's level degree in rehabilitation counseling.

West Virginia:

University of West Virginia

- Master's level degree in rehabilitation counseling.

Optometry:

New York:

State University of New York School of Optometry

- Doctor of Optometry degree awarded.

Because of the proposed outcomes of the low vision Master's program, PCO's administration and faculty will establish and strengthen close ties with these regional university programs. The mission of remediating the disparity of the traditional approach, the development of a low vision curriculum model which can be duplicated by other universities and a philsophical shift throughout the field of services to visually handicapped can only be accomplished if these programs share common goals.

PCO anticipates establishing with these regional programs formal and informal interactions such as consultations, guest lectures, shared courses, team teaching, internship sites, etc. The area universities which offer undergraduate degrees are expected to be a part of the recruitment pool for the low vision master's program. In return, PCO will be a part of the recruitment pool for universities offering doctoral programs.

References:

1. American Association of Workers for the Blind, Blindness Annual, Washington, DC, 1977-78.

2. American Association of Workers for the Blind, Blindness Annual, Washington, DC, 1979-80.

3. Bureau of the Census, 1976 Survey of institutional persons: A study of persons receiving long term care, (Current Population Reports, Series pp. 23, No. 69) Washington, DC: U.S. Government Printing Office 1978.

4. Colenbrander, A. "A Clear Perspective on Low Vision" Blindness, American Association of Workers for the Blind, Washington, DC: pp. 94, 1978.

5. Description of previous eye examination taken from patient interviewed at The William Feinbloom Vision Rehabilitation Center, 1978.

6. Framington Eye Study Monograph, Survey of Ophthalmology, Vol. 24 (Suppl.) May-June, 1980.

7. Genesky, S.M. "Data Concerning the Partially Sighted and Functionally Blind." Journ. Vis. Impair. Blind. 5, 1978.

8. Goodrich, G.L. and Quillman, R.D. "Low Vision Entering the 1980's". Blindness, AAWB, 80: 36-50, 1979-80.

9. Gordon, A.R. "Employment of Visually Impaired Persons: New Demands on Programs for the Blind". Blindness, AAWB, Washington, DC:, 135-140, 1980-81.

10. Hirsch, M.J. "Introduction", Journ. of California Optometric Assoc., 32: 6, 1964.

11. Jahoda, M. "A Clear Perspctive on Low Vision", Blindness, AAWB, Washington, DC: 1977-78.

12. Kahn, H.A. and Morehead, H.B. Statistics on blindness in the model reporting area, (1969-70). DHEW Pub. No. 73-427, Washington, DC: U.S. Government Printing Office, 1970.

13. Low Vision Panel Report (unpublished paper) New York: American Foundation for the Blind, 1980.

14. Low Vision Service Standards, New York: National Accreditation Council, 1980.

15. National Advisory Eye Council, Low vision rehabilitation, Panel report, Program Planning Subcommittee (unpublished report) Washington, DC: 1981.

16. National Institute of Handicapped Research, Executive summary of the long range plan, Washington, DC: 1981.

17. National Society for the Prevention of Blindness, Inc., Estimated statistics on blindness and vision problems, New York: 1966.

18. Rosenbloom, A.A. "Low Vision Aid", Borish, I.M. in: Clinical Refraction (ed.) Chicago, IL: Professional Press, 1970.

19. Russell, B. "Changing Population of the Blind in the United States: The Geriatric Blind", Blindness, AAWB 80: 57-67, 1979.

20. Patient comments taken from patient interviews and files, The William Feinbloom Vision Rehabilitation Center, 1980-81.

21. Self Study Report of the Pennsylvania College of Optometry (unpublished report) Philadelphia, PA: PCO Press, 1982.

22. Source Book on Aging, Marquis Who's Who, Inc., First Edition 1977.

23. Stetten, DeWitt, Jr., M.D., Ph.D., "Coping with Blindness, "New England Journal of Medicine, August, 1981.

24. Webster's New Collegiate Dictionary, Springfield, MA: G and C Merriam Co., 1980.

VII. REFERENCES

1. American Association of Workers for the Blind, Blindness Annual, Washington, DC, 1977-78

2. American Association of Workers for the Blind, Blindness Annual, Washington, DC, 1979-80.

3. Bureau of the Census, 1976 Survey of Institutional Persons: A Study of Persons Receiving Long Term Care, (Current Population Reports, Series P 23, No. 69) Washington, DC: U.S. Government Printing Office 1978.

4. Colenbrander, A. "A Clear Perspective on Low Vision " Blindness, American Association of Workers for the Blind, Washington, DC Pg 94, 1978.

5. Description of previous eye examination taken from patient interviewed at The William Feinbloom Vision Rehabilitation Center, 1978.

6. Framington Eye Study Monograph, Survey of Ophthalmology, Vol. 24 (Suppl.) May-June, 1980.

7. Genesky, S.M. "Data Concerning the Partially Sighted and Functionally Blind." Jour. Vis. Impair. Blind. 5, 1978.

8. Goodrich, G.L., Quillman, R.D. "Low Vision Entering the 1980's". Blindness, AAWB, 80:36-50, 1979-1980.

9. Gordon, A.R. "Employment of Visually Impaired Persons: New Demands on Programs for the Blind". Blindness, AAWB, Washington, DC, 135-140, 1980-81.

10. Hirsch, M.J. "Introduction", Jour. of California Optometric Assoc., 32:6, 1964.

11. Jahoda, M. "A Clear Perspective on Low Vison", Blindness, AAWB, Washington, DC, 1977-78.

12. Kahn, H.A. and Morehead, H.B., Statistics on Blindness in the Model Reporting Area, (1969-70). DHEW Pub. No. 73-427, Washington, DC U.S. Government Printing Office, 1970.

13. Low Vision Panel Report (unpublished paper) New York, American Foundation for the Blind, 1980.

14. Low Vision Service Standards, New York, NY, National Accreditation Council, 1980.

15. National Advisory Eye Council, Low Vison Rehabilitation, Panel Report, Program Planning Subcommittee (unpublished Report) Washington, DC, 1981.

16. National Institute of Handicapped Research, Executive Summary of the Long Range Plan, Washington, DC, 1981.

17. National Society for the Prevention of Blindness, Inc, Estimated Statistics on Blindness and Vision Problems, New York, NY, 1966.

18. Rosenbloom, A.A. "Low Vision Aid", Borish, I.M. in: Clinical Refraction (ed) Chicago: Professional Press, 1970.

19. Russell, B. "Changing Population of the Blind in the United States: The Geriatric Blind", Blindness, AAWB 80:57-67, 1979.

20. Patient comments taken from patient interviews and files, The William Feinbloom Vision Rehabilitation Center, 1980-81.

21. Self Study Report of the Pennsylvania College of Optometry (unpublished report) Phila., PA: PCO Press. 1982.

22. Source Book on Aging, Marquis Who's Who, Inc., First Edition 1977.

23. Stetten, DeWitt, Jr., M.D., Ph.D., "Coping with Blindness," New England Journal of Medicine, August, 1981.

24. Webster's New Collegiate Dictionary, Springfield, Mass: G & C Merriam company, 1980.

25. Westat, Inc. Summary and Critique of Available Data on the Prevalence and Economic and Social Costs of Visual Disorders and Disabilitites Rockville, Md.: Westat, Inc., USHEW, Public Health Service, Contract #1 EY52108, 1976.

APPENDIX A

NATIONAL NEEDS SURVEY
(1979-81)

POSITION______________________________

YEARS OF EDUCATION/REHAB. EXPERIENCE__________

This questionnaire is part of a feasibility study for the development of a Masters degree program in the area of vision rehabilitation. The program under consideration would train individuals to provide functional evaluation, training and support services for low vision persons. Their areas of competency would include: 1) preliminary visual screenings, 2) functional indoor and outdoor visual performance evaluations, 3) functional evaluation and training in the use of optical aids prescribed by an eye care specialist, 4) training in visual efficiency without aids and with non-optical aids and 5) provision of consultative and support services to professionals such as eye care specialists, educators, rehabilitation personnel and orientation and mobility specialists. This professional may function in a variety of settings such as low vision clinics, state offices for the visually impaired, public and private educational systems, etc.

Since you are the professionals in the field of visual impairment, we consider your imput very valuable and appreciate your time and thought in answering this questionnaire.

---

1) What percentage of your average yearly students/caseload is totally blind? _____

2) What percentage of your average yearly students/caseload has low vision? _____

3) Do you feel your college/university training program adequately prepared you for serving your totally blind students/clients? YES__ NO__
Explain:____
____

4) Do you feel your college/university training program adequately prepared you for serving your low vision students/clients? YES__ NO__
Explain:____
____

5) What percentage of your college/university training program's curriculum was geared towards the: totally blind population? _____
low vision population? _____

6) Do you feel there is a need for a Masters degree program dealing specifically with the education/rehabilitation of low vision individuals?
YES__ NO__ Explain:___________________________________
____

7) If such a program were offered, would you consider enrolling in it?
YES__ NO__ Explain:___________________________________
____

8) Would you consider enrolling if financial aid were offered? YES__ NO__

9) Based on your knowledge of the education/rehab. needs of low vision persons, what three curriculum areas would you recommend to be stressed?
1)____
2)____
3)____

POSITION ______________________________
COLLEGE/UNIVESITY ______________________________
DEPARTMENT ______________________________

This questionnaire is part of a feasibility study for the development of an advanced degree program in the area of vision rehabilitation. The program under consideration would train individuals to provide functional evaluation, training and support services for low vision persons. Their areas of competency would include: 1) preliminary vision screening, 2) functional indoor and outdoor visual performance evaluations (including near and distance tasks), 3) functional evaluation and training in the use of optical aids prescribed by an eye care specialist, 4) training for visual efficiency without aids (such as eccentric fixation, vision stimulation and efficient scanning techniques), 5) training in the use of non-optical aids, 6) provision of consultative and support services to other professionals such as eye care specialists, educators, rehabilitation personnel, and orientation and mobility specialists. This professional may function in a variety of settings such as low vision clinics, state offices for the visually impaired, and public or private educational systems.

Since you are involved in the proparation of professionals in the field of visual impairment, we consider your input very valuable and appreciate your time and thought in answering this questionnaire.

1) Approximately how many students graduate from your program each year? ___
2) Do you feel your program adequately prepares students to serve their totally blind students/clients? YES ___ NO ___
EXPLAIN: ______________________________
____

3) Do you feel your program adequately prepares students to serve their low vision students/clients? YES ___ NO ___
EXPLAIN: ______________________________
____

4) What percentage of your programs curriculum is geared toward the totally blind population? ___
5) What percentage of your programs curriculum is geared toward the low vision population? ___
6) What percentage of your students' student teaching/internship case load is totally blind? ___
7) What percentage of your students' student teaching/internship case load is low vision? ___
8) Do you feel there is a need for a Master's degree program dealing specifically with the education/rehabilitation of low vision individuals? YES ___ NO ___ EXPLAIN: ______________________________
____

9) If such a program existed, would you recommend any of your students to enroll in it? YES ___ NO ___ EXPLAIN: ______________________________
____

10) If such a program were developed, based on your needs in the field of education/rehabilitation of the low vision population, what three areas of curriculum development would you recommend to be stressed?

1) ______________________________

2). ______________________________

3) ______________________________

ADMINISTRATION/EMPLOYER - Questionnaire

1. Approximately how many visually impaired clients did your agency serve in 1979? _______________

2. What percentage were totally blind? ___________

3. What percentage had low vision? _______________

4. Do you feel your agency adequately serves your totally blind clients? Yes_____ No_____ Comment_____________________________
____
____

5. Do you feel your agency adequately serves its low vision clients? Yes_____ No_____ Comment____________________________________
____

6. In your organization does any professional coordinate programs, or act a a liaison between clinical low vision services and rehabilitation services? ______________

7. If yes, what is the profession of this person? ___________________

8. If no, do you feel there is a need for such a person (to coordinate or act as a liaison between clinical and rehabilitation services)?
____

9. Do you feel there is a need for a Master's degree program dealing specifically with the education/rehabilitation of low vision individuals? ________________

10. If such a program were developed, would you consider hiring a graduate for your agency? ______________

11. Would you consider sponsoring someone from your agency to attend such a program? ___________________

12. Based on your knowledge of the educational rehabilitation needs of the low vision person, what three curriculum areas would you recommend to be stressed?
1)____
2)____
3)____

APPENDIX B

LOW VISION WORKSHOP

NEEDS SURVEY

(1982)

LOW VISION TRAINING NEEDS SURVEY
FOR ADMINISTRATORS/SUPERVISORS

The PA College of Optometry, Low Vision Research & Training Center will be conducting a regional training workshop in November. Your completion of this form will assist us in planning learning opportunities which best match the needs of your staff. Please return it to your low vision training coordinator by June 10th. Thank you!

SECTION I

Name: ______________________________

Position: ______________________________

Organization: ______________________________

Address: ______________________________

____

____

Give Estimate for your Staff

___ Total Caseload Size

___ Average Daily Caseload

Caseload Distribution:

___% Totally Blind

___% Low Vision

___% Other

100%

___% Elderly

___% Adults

___% Children

100%

___ Your staff's average years of experience working with visually impaired individuals.

1. Level of preparation in assisting my staff in meeting the needs of their:

Totally blind caseload __good __adequate __insufficient

Low vision caseload __good __adequate __insufficient

2. Three major problems my staff experiences in working with low vision clients are:

1. ______________________________

2. ______________________________

3. ______________________________

3. A regional training workshop would be most useful for my staff if it

included: ______________________________

____

____

____

SECTION II

Please read the topics below and using a scale of 1 (low) to 5 (high) rate your staff's level of knowledge on that topic. Then repeat the process in terms of the topic's relevance to your staff's job areas (i.e. is it information that would help you perform your job better?)

	Knowledge	Relevance to my job
	(1 low to 5 high)	
Part 1: LOW VISION AND ITS EFFECTS		
1. Basic anatomy and optics of the eye	____	____
2. Common low vision diseases & conditions	____	____
3. Functional implications of low vision	____	____
4. Psycho-social implications of low vision	____	____
Part 2: LOW VISION ASSESSMENTS		
5. Clinical low vision examination	____	____
6. Functional interpretations of eye reports	____	____
7. Functional vision assessments in the following situations:		
a) at home	____	____
b) at work	____	____
c) at school	____	____
d) travel	____	____
e) other	____	____
Part 3: LOW VISION TRAINING		
8. Vision stimulation	____	____
9. Increasing visual efficiency without optical aids	____	____
10. Training with near optical aids	____	____
11. Training with distance optical aids	____	____
12. Training with visual field enhancement systems (e.g., fresnel prisms, reversed telescopes)	____	____
Part 4: SERVICE DELIVERY		
13. Interdisciplinary roles and/or approaches	____	____
14. Interagency referrals and follow-ups	____	____

	Knowledge	Relevance to my job
	(1 low to 5 high)	
15. Working with selected low vision populations:		
a) children	____	____
b) adult	____	____
c) elderly	____	____
d) multi-handicapped	____	____
e) learning disabled	____	____
16. Environmental and task modifications for low vision individuals		
a) at home	____	____
b) at work	____	____
c) at school	____	____
d) travel	____	____
e) other	____	____
17. Marketing strategies for job placement of low vision individuals	____	____

18. Other (list) ______________________________

____

____

____

____

____

LOW VISION TRAINING NEEDS SURVEY
FOR INDIVIDUALS SERVING VISUALLY IMPAIRED POPULATIONS

The PA College of Optometry, Low Vision Research & Training Center will be conducting a regional training workshop in November. Your completion of this form will assist us in planning learning opportunities which best match your needs. Please return it to your low-vision training coordinator by June 10th. Thank you!

SECTION I

Name:______________________________

Position:______________________________

Organization:______________________________

Address:______________________________

____

____

Supervisor's Name______________________________

___ Total Caseload Size

___ Average Daily Caseload

Estimated Caseload Distribution:

___% Totally Blind	___% Elderly
___% Low Vision	___% Adult
___% Other	___% Children
100%	100%

___ Years of experience working with visually impaired individuals.

1. Level of preparation in meeting the needs of my: (check one)

Totally blind caseload	__good	__adequate	__insufficient
Low vision caseload	__good	__adequate	__insufficient

2. Three major problems I experience in working with low vision clients are:

   1.____

   2.____

   3.____

3. A regional training workshop would be most useful for me if it included:____

____

____

____

SECTION II

Please read the topics below and using a scale of 1 (low) to 5 (high) rate your level of knowledge on that topic. Then repeat the process in terms of the topic's relevance to your job (i.e. is it information that would help you perform your job better?)

	Knowledge	Relevance to my job
	(1 low to 5 high)	
Part 1: LOW VISION AND ITS EFFECTS		
1. Basic anatomy and optics of the eye	____	____
2. Common low vision diseases & conditions	____	____
3. Functional implications of low vision	____	____
4. Psycho-social implications of low vision	____	____
Part 2: LOW VISION ASSESSMENTS		
5. Clinical low vision examination	____	____
6. Functional interpretations of eye reports	____	____
7. Functional vision assessments in the following situation:		
a) at home	____	____
b) at work	____	____
c) at school	____	____
d) travel	____	____
e) other	____	____
Part 3: LOW VISION TRAINING		
8. Vision stimulation	____	____
9. Increasing visual efficiency without optical aids	____	____
10. Training with near optical aids	____	____
11. Training with distance optical aids	____	____
12. Training with visual field enhancement systems (e.g., fresnel prisms, reversed telescopes)	____	____
Part 4: SERVICE DELIVERY		
13. Interdisciplinary roles and/or approaches	____	____
14. Interagency referrals and follow-ups	____	____

	Knowledge	Relevance to my job
	(1 low to 5 high)	
15. Working with selected low vision populations:		
a) children	____	____
b) adult	____	____
c) elderly	____	____
d) multi-handicapped	____	____
e) learning disabled	____	____
16. Environmental and task modifications for low vision individuals		
a) at home	____	____
b) at work	____	____
c) at school	____	____
d) travel	____	____
e) other	____	____
17. Marketing strategies for job placement of low vision individuals	____	____

18. Other (list) ______________________________

____

____

____

____

____

LOW VISION TRAINING NEEDS SURVEY
FOR EYE CARE SPECIALISTS

The PA College of Optometry, Low Vision Research & Training Center is planning to conduct a Low Vision Training Workshop for Eye Care Specialists. Your completion of this form will assist us in planning learning opportunities which best match your needs. Please return it within 5 days.

SECTION I

Name: ______________________________

Address: ____________________________

Years of experience as an eye care specialist
Average weekly patientload _____

Patientload distribution:

___% Normal Vision	___% Elderly
___% Low Vision	___% Adults
___% Total Blindness	___% Children
100%	100%

Patientload Distribution:

___% congenital ocular disorders
___% macular degeneration
___% retinitis pigmentosa
___% diabetic retinopathy
___% cataracts
___% glaucoma
___% optic atrophy
___% corneal problems
___% other (specify) ______________

____

100%

1. Level of preparation in serving my patients;

Normal Vision	__good	__adequate	__insufficient
Low Vision	__good	__adequate	__insufficient
Total Blindness	__good	__adequate	__insufficient

2. Three major problems I experience in working with low vision patients are (if applicable):

a. ____

b. ____

c. ____

3a. How useful would low vision information and/or training be to your practice?

__very useful __somewhat useful __not useful

3b. A Low Vision Training Workshop would be most useful to me if it included:

____

____

____

SECTION II

Please read the topics below and using a scale of 1 (low) to 5 (high) rate your level of knowledge on that topic. Then repeat the process in terms of the topic's relevance to your practice (i.e. is it information that would help you perform your job better?)

	Knowledge	Relevance to my practice
	(1 low to 5 high)	
Part 1: LOW VISION AND ITS EFFECTS		
1. Basic anatomy and optics of the eye	____	____
2. Common low vision diseases & conditions	____	____
3. Functional implications of low vision	____	____
4. Psycho-social implications of low vision	____	____
Part 2: LOW VISION ASSESSMENTS		
5. Clinical low vision examination	____	____
6. Prescribing aids for specific patient goals		
a) Telescopic lenses	____	____
b) Telemicroscopes	____	____
c) Microscopes	____	____
d) High powered bifocals	____	____
e) Magnifiers	____	____
f) Visual field enhancement systems	____	____
g) Nonoptical aids	____	____
7. Functional vision assessments for the following situations:		
a) home	____	____
b) work	____	____
c) school	____	____
d) travel	____	____
e) other	____	____
Part 3: LOW VISION TRAINING		
8. Vision stimulation	____	____
9. Increasing visual efficiency without optical aids	____	____
10. Training with near optical aids	____	____
11. Training with distance optical aids	____	____
12. Training with visual field enhancement systems (e.g., fresnel prisms, reversed telescopes)	____	____

	Knowledge	Relevance to my practice
	(1 low to 5 high)	
PART 4: SERVICE DELIVERY		
13. Interdisciplinary roles and/or approaches	____	____
14. Making referrals and following up	____	____
15. Working with selected low vision populations:		
a) children	____	____
b) adult	____	____
c) elderly	____	____
d) multi-handicapped	____	____
e) learning disabled	____	____
16. Environmental and task modificiations for low vision individuals		
a) at home	____	____
b) at work	____	____
c) at school	____	____
d) travel	____	____
e) other	____	____
17. Resources for		
a) obtaining low vision aids	____	____
b) training patients in use of low vision aids	____	____
c) financial assistance for purchases of aids or services	____	____
d) helping low vision patients and their families adjust to low vision	____	____

e) other (please specify) ____________________

____

____

18. Other (list) ____________________________

____

____

____

____

____

APPENDIX C

LOW VISION WORKSHOP

NEEDS SURVEY RESULTS
(1982)

NEEDS SURVEY RESULTS
REGIONAL LOW VISION TRAINING NEEDS SURVEY

RESPONDENTS

The respondents to the Regional Low Vision Training Needs Survey included the following-

Total Number	230
Supervisors	14 - 6%
Administrators	26 - 11%
Rehabilitation Counselors	71 - 31%
Rehabilitation Teachers	37 - 16%
O & M Specialists	22 - 10%
Social Workers	6 - 3%
Others	54 - 23%

The caseload distributions ranged for service providers from 0 to 400 with an average reported caseload of 93. In examining the distributions of these caseloads there were 62% low vision, 22% totally blind and 17% other. The distribution by age range included 31% elderly, 51% adult and 18% children. As far as respondents' levels of preparation for serving totally blind and low vision individuals, they rated themselves as less prepared to serve their low vision caseload.

PROBLEMS EXPERIENCED BY RESPONDENTS IN SERVING LOW VISION PERSONS

Problems were grouped under professionals' lack of knowledge, client related problems, service delivery problems and other. Highlights from these problems include the following-

Professional Lack of Knowledge

89.00	Functional Implications
41.00	Aids and Optics
13.00	Low vision Clinical Exam & Functional Interpretations
13.00	Functional Vision Assessments
5.00	Vision Stimulation
5.00	Other Lacks of Knowledge
4.00	Training in Use of Vision
3.00	Referral Process and Timing
1.00	Job Placement and Marketing

Client Problems

64.00	Affective
19.00	Cognitive
15.00	Physical
14.00	Mobility
15.00	Technical
6.00	Social

2.00	Vocational
1.00	Self-Care
1.00	Other Client Related Problems

Service Delivery System Problems

44.00	Low Vision Services - Lacking, Untimely
34.00	Financial
15.00	Aids
5.00	Other Professionals' Lack of Knowledge
5.00	Other Service Delivery System Problems
2.00	Public Relations
2.00	Instructional Information
1.00	Vocational

Other Problems

9.00	Counseling
2.00	Multi-Handicaps
1.00	Vocational
1.00	Adaptions
1.00	Understanding of Fee Schedules
1.00	Limited Experience
1.00	Individualization of Low Vision

GAPS BETWEEN KNOWLEDGE AND JOB RELEVANCE

The following items were identified as the largest gaps between knowledge and job relevance among the respondents to this questionnaire. These included:

	Knowledge	Relevance	Gap
1. Training with visual field enhancement systems	1.80	3.27	1.47
2. Training without optical aids	2.40	3.83	1.43
3. Functional implications of low vision	3.29	4.56	1.27
4. Training with near optical aids	2.64	3.91	1.27
5. Vision stimulation	2.28	3.47	1.19
6. Working with multi-handicapped	2.81	4.00	1.19
7. Modifying the work environment	2.39	3.56	1.17
8. Training with distance optical aids	2.56	3.70	1.14
9. Psychosocial aspects of low vision	3.31	4.40	1.09
10. Functional interpretations of the eye report	3.30	4.39	1.09

11. Working with the learning disabled	2.22	3.29	1.07
12. Environmental modifications for travel	2.57	3.64	1.07
13. Environmental modifications at home	2.79	3.84	1.05
14. Low Vision examination	2.82	3.82	1.00
15. Marketing strategies	2.06	3.06	1.00

TRAINING RECOMMENDATIONS

Paralleling closely with the identified problems and gap areas were the following recommendations:

-Over 85 individuals were interested in information on aids with emphasis on new and advanced ones.

-Over 21 identified a strong interest in generic low vision training. (Covering the whole spectrum)

-Approximately 20 individuals emphasized information functional implications and common low vision diseases and conditions.

-The next highest was emphasis on vocational aspects of low vision including career planning, vocational training, self-employment and job placement.

-16 emphasized counseling. Many individuals were concerned about how to motivate clients, how to assist them with adjustment to visual loss and in communicating about their disability and their abilities.

-The next highest category was on functional interpretations of the eye report, followed by training and visual stimulation.

-The last large category, receiving a fair number of comments, was on vehicles for assuring follow-up of services in the area of low vision.

LOW VISION TRAINING NEEDS SURVEY
FOR EYE CARE SPECIALISTS
SUMMARY

Thirty-four respondents to an Eye Care Specialists Survey conducted in Pennsylvania ranged from one to forty-five years of experience. Their level of preparation for serving individuals with normal vision was rated consistently -- good, for low vision - barely adequate, and for totally blind - insufficient.

Responses to problems in working with low vision patients centered on financial concerns, limited knowledge, limited equipment, limited time, and patient-concerns (costs, acceptance of aids, inability to adapt to low vision aids, fear of failure, limited motivation, poor vision discrimination, etc.), as well as concerns related to the state of the art and access of the eye care specialists (and/or the patient) to necessary resources. See Attachment 1 for complete list.

Recommendations for the Low Vision Training Workshop emphasized low vision aids especially new ones, clinical procedures, referral sources, equipment sources, financial sources, effective scheduling, and hands-on activities.

When knowledge of low vision topics were compared with relevance to the eye care specialist's job, the areas with greatest gaps included-

- Resources for financial assistance for purchases of aids, or services
- Increasing visual efficiency without optical aids
- Training with visual field enhancement systems
- Prescribing non-optical aids for specific patient goals

- Vision stimulation
- Training with near optical aids
- Training with distance optical aids
- Prescribing low vision aids such as telemicroscopes and visual field enhancement systems
- Resources for helping low vision patients and their families adjust to low vision

ATTACHMENT 1

PROBLEMS EXPERIENCED BY EYE CARE SPECIALISTS IN SERVING LOW VISION PERSONS

Inconvenience of trial fitting telescopic lenses
Transit and mobility outside of institutional pattern
Cost and ability to pay
Effective scheduling of office space
Accurate prediction of results
Time requirements (to counsel patients, to exam and prescribe, etc.)
Expense of aids
Elderly patients acceptance of aids
The high frustration level of these patients
Knowing what forms of financial assistance are available for aids
Being certain patients are maximizing available low vision resources
Obtaining satisfactory sources for referral to state agencies
Very poor service on obtaining fabricated visual aids
Inadequate experience in insurance reimbursement
Motivation
Enough Equipment
Cooperation with the medical community
Lack of equipment and/or sources of equipment
Lack of knowledge (e.g. best device to dispense)
Lack of experience
Limited time to counsel patient
Best device to dispense - ? what's best for what
Their mobility to realize that they cannot attain such as they once had i.e. in cases of macular degeneration or choroidal sclerosis, choro retinitis etc. that has eroded thru the macula
Senile inability to adapt to low vision aids
Inadequate materials to utilize my abilities
Lack of patients to enable me to sharpen skills
Insufficient magnification - available aids
Expense of the aids
Motiviation
Unrealistic expectations
Time
Variation in low vision aids etc.
Inability to communicate problem no matter how much time I spend
Poor results
Patient satisfaction
High fees for service
I know of no competent low vision expert to whom I could confidently refer patients and who practices within a reasonable distance
Inadequacy and unfamiliarity with appropriate equipment
Time consuming care-compensation inadequate or unavailable
Patient lack of funds

- Reluctance to keep referral appointments
- Patient fear of failure
- Equipment too heavy
- Cost
- Finding financial assistance for patients
- Getting opthalmologists to refer for all visually impaired patients
- Patient rarely motivated to use device prescribed, pertains to elderly
- Financial support for low vision patients for appropriate aids
- Availability of low vision aids
- Poor funding by insurance carriers
- Widespread advertising of aids with little value, i.e. "Honeybee"
- Low referral rate from optometrists
- Lack of accurate procedures
- Lack of sophisticated equipment
- Poor patient vision discrimination
- Their expectations
- Giving them reading acuity
- Deterioration in visual acuity from trial frame to actual Rx
- Visual Acuity Testing
- Equipment sources
- Referral sources
- Lack of knowledge of available options

TRAINING RECOMMENDATIONS

- Inconvenience of trial fitting telescopic lenses
- Transit and mobility outside of institutional pattern
- Cost and ability to pay
- Effective scheduling
- Survey of most recent developments-medical as well as optical
- Information on availability and cost of low vision aids
- Low vision aids and usage for general population-this would not include extremely complex or expensive procedures
- The areas where I am most weak (Parts III and IV of the survey) and an update on the latest available aids
- Virtually anything beyond the typical elementary information normally presented
- Much needed clinical experience
- Basic information and instruction
- Information on subjects outlined on sheets following this
- When to use, what type of device
- A usable routine for exam and work-up and handling devices
- Hands-on, practical demonstration of actual correcting of elderly (senile) patients who make up the bulk of my low vision practice
- Availability and training in use of low vision aids
- Prismatic corrections
- Would prefer to refer
- Not enough exposure to comment
- Standard (most used) clinical procedures and low vision aids

- Techniques for case-finding, rapid evaluation and appropriate referral
- Therapy of the uncomplicated low vision patient by the general practitioner
- Reimbursement sources for low vision work
- Funding, fears of failure, and client's reluctance to keep referral appointments, plus latest techniques and equipment
- A training session for my assistants on Saturday to help them better train my patients and their systems
- Low vision work-up. Availability of low vision acuity charts and review of metric notation for acuity documentation and magnification requirements
- "Hands-on" work with newer aids (Bioptic systems, etc.)
- Comprehensive list of available equipment, aids, support
- Research results of new low vision aids
- New training techniques for low vision patients
- Time to talk with other low vision practitioners
- Access to low cost devices
- Psychology of handling the patients before and after
- Low cost of low vision aids
- Technique of subjects with low vision aids
- Visual acuity testing
- Equipment sources
- Referral sources
- Most successful solution to most common problems

APPENDIX D
NATIONAL ADVISORY COMMITTEE

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Office of Academic Affairs

**Pennsylvania College
of Optometry**

The Eye Institute
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APPENDIX E
CURRICULUM DEVELOPMENT WORKSHOP
PARTICIPANT LIST

PENNSYLVANIA COLLEGE OF OPTOMETRY
CURRICULUM DEVELOPMENT WORKSHOP
MASTER OF SCIENCE PROGRAM IN VISION REHABILITATION
JANUARY 16, 1983
PARTICIPANT LIST

Sarah Appel, O.D.	Staff Optometrist, William Feinbloom Vision Rehabilitation Center (WFVRC)
Sheree J. Aston, O.D.	Optometrist-Private Practice, PCO Consultant
Ann Barber, M.Ed.	Low Vision Orientation & Mobility Specialist WFVRC
Felix M. Barker II,O.D.,M.S.	Track Coordinator/Internal Clinical Educational Programs
Monica Beliveau, M.Ed.	Low Vision Programs Consultant, PCO
Alvin Byer, O.D., M.S.	Assistant Dean for Curriculum,PCO
Roger Cummings, O.D.	Assistant Professor of Optometry, PCO
William del'Aune, Ph.D.	Research Psychologist, VA Hosptial, West Haven Conn.
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Laura Edwards, M.S.	Program Coordinator Low Vision Research and Training Center, PCO
David Evian, O.D.	Visiting Staff Optometrist, The Eye Institute Phila, PA.
Saul Freedman, Ph.D.	Clinical Psychologist, American Foundation of the Blind
Duane Geruschat, M.A.	Low Vision Orientation and Mobility Specialist WFVRC
Marcy Graboyes, M.S.W.	Social Worker WFVRC
Amy Grossman, M.S.W.	WFVRC Administrator
Lea Terwilliger Grubbs, M.S.W.	Social Worker, Miss.
Randall Jose, O.D.	Clinical Professor, University of Houston
Gail Kenmonth, M.A.	Low Vision Orientation and Mobility Specialist, WFVRC
Susan Kershman, Ph.D.	Consultant, Office of Academic Development, PCO
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Marla Moon, O.D.	Pediatrics Resident, The Eye Institute, Phila
William Padula, O.D.	American Optometric Association Representative, Wash, D.C.
Amy Pais, M.S.	Coordinator of Adjustment Services, Arkansas Enterprises for the Blind
Lawrence Pollock, Ph.D.	Clinical Psychologist, Texas
Jay Richards	Student Council Representative, PCO
Robert Ruggiero, O.D.	Staff Optometrist, WFVRC
Lawrence Scadden, Ph.D.	Independent Consultant PCO
Audrey Smith, M.Ed.	Program Director, M.S. Program in Vision Rehabilitation, PCO
Mark Steciw, M.Ed.	Low Vision Educational Specialist, WFVRC
Patricia Valecce	Administrative Assistant Academic Dev., PCO
Satya Verma, O.D.	Externship Scheduling Officer, PCO
Gale Watson, M.A.Ed.	Program Coordinator- Special Education Personnel Preparation Low Vision Project, PCO
Steven Whittaker, Ph.D.	Asst. Professor of Physiological Optics, PCO
George Woo, O.D.	Professor of Optometry, U. of Waterloo, Canada
Anne Yeadon, M.A.	Asst Exec Director C.I.L., New York

PENNSYLVANIA COLLEGE OF OPTOMETRY
CURRICULUM DEVELOPMENT WORKSHOP
MASTER OF SCIENCE PROGRAM IN VISION REHABILITATION
CHERRY HILL INN
SATURDAY, JANUARY 15, 1983

WORK TEAMS

FUNCTIONAL IMPLICATIONS OF OCULAR ANATOMY

Dr. David Evian
Gail Kenmonth
* Dr. Bob Ruggiero
Dr. Satya Verma
Linda Wasserman

FUNCTIONAL IMPLICATIONS OF OPTICAL PRINCIPLES

* Dr. Sarah Appel
Ann Barber
Dr. Al Byer
Dr. Randy Jose
Dr. Marla Moon

INTERDISCIPLINARY LOW VISION

* Monica Beliveau
Dr. Roger Cummings
Marsha Levy
Jay Richards
Gale Watson

HUMAN DEVELOPMENT AND LEARNING

* Duane Geruschat
Dr. Eileen Klitsch
Dr. Bill Padula
Dr. Larry Pollock
Mark Steciw

PSYCHO-SOCIAL IMPLICATIONS OF VISUAL IMPAIRMENT

Laura Edwards
Dr. Saul Freedman
* Marcy Graboyes
Lea Terwilliger Grubbs

RESEARCH I & II

* Dr. Bill De l'Aune
Dr. Larry Scadden
Dr. Steve Whittaker
Dr. George Woo

PRACTICE MANAGEMENT

* Dr. Tony DiStefano
Amy Grossman
Amy Pais
Anne Yeadon

PENNSYLVANIA COLLEGE OF OPTOMETRY
CURRICULUM DEVELOPMENT WORKSHOP
MASTER OF SCIENCE PROGRAM IN VISION REHABILITATION
CHERRY HILL INN
SUNDAY, JANUARY 16, 1983

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* Duane Geruschat
Lea Terwilliger Grubbs
Dr. Randy Jose
Dr. Larry Pollock
Dr. Bob Ruggiero
Dr. Larry Scadden
Mark Steciw
Linda Wasserman
Anne Yeadon

CLINICAL OBSERVATION I & II

Dr. Roger Cummings
Dr. Tony DiStefano
* Laura Edwards
Marcy Graboyes
Amy Grossman
Gail Kenmonth
Marsha Levy
Dr. Steve Whittaker
Dr. George Woo

FIELD PRACTICE AND INTERNSHIP

Dr. Sarah Appel
Dr. Sheree Aston
Dr. Al Byer
Dr. Bill De l'Aune
Dr. Saul Freedman
Dr. Marla Moon
Dr. Bill Padula
Amy Pais
* Gale Watson
Dr. David Evian

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